

SEPTEMBER, 1868.

COPYRIGHT.

HEREAFTER the MONTHLY will be copyrighted. Our motive in doing this is the usual one—namely, self-protection. While it is desirable that whatever we do for the promotion of education shall not be restricted in its sphere of usefulness, we are convinced that the interests of education are not likely to be in any way injured by our refusing to support, or to help to support, parasites upon the cause. So we avail ourselves of the protection which the copyright law affords us against those unscrupulous persons (we cannot call them editors) who make a practice of stealing our matter; and against others only a little more or less scrupulous, in that they pretend to give credit for what they copy, but are careful to give it in such a way that it is equivalent to no credit at all. The changes which these latter ring upon the fictitious titles "*Ed. Monthly*," "*The Teacher*," "*The New York Educational*," "*The N. Y. Teacher*," and so on, suffice to show the spirit in which such acknowledgments are made—especially when perhaps three or four different names are appended to as many different articles from the same number of the MONTHLY, and reprinted at the same time.

Another class of unscrupulously scrupulous appropriators are they who, unlike the foregoing, are not afraid to print the true title of the MONTHLY, but are merely unwilling to confess the extent of their indebtedness to it. These copy freely, and contrive to complete their extracts in such a way that the appended "*Am. Ed. Monthly*" shall stand against some comparatively unimportant part, a detached paragraph it may be, or a few lines used as a tail-piece. Our digests of Educational Intelligence afford a fine field for this sort of poaching. Official Reports, as a general thing, are not the most entertaining reading in the world. At

any rate, we have thus far failed to find any one who can make it a labor of love to glean from them such facts and statistics, special and relative, as are likely to be of permanent as well as general interest. Consequently the work falls to us ; and while it is gratifying to see the results of our labor so highly appreciated, it is not gratifying to see them stolen month after month—as they are by some journals that we could name—or, what is little better, taken bodily, and a tenth part ostentatiously accredited to a fragment of the MONTHLY's title.

As has been said elsewhere, our editorial brethren are welcome to any thing and every thing in our pages, on the single condition that the proper credit is given for it. This restriction will not affect in the least the honorable members of the fraternity ; for they never forget the claims of justice and courtesy. But we intend that it shall affect those parasites of the press whose editorial equipment is a pair of scissors, and a flexible conscience.

"TEACHERS' PECULIARITIES."

BETWEEN a mere occupation and a vocation there is an essential difference. In the former, a person is kept drudging for the sake of bread and butter. In the latter, he busies himself not only for a livelihood, but also for love of the work.

Primarily a man's tastes determine whether or not an employment is to him a vocation. And according as it is a vocation or only an occupation, so will be the peculiarities which the employment will stamp upon him. If the employment be a vocation, the observer will be sure to find in the worker an expression and demeanor indicative of largeness, benevolence, liberality, and the spirit of general as well as special inquiry. We know a grainer whose genius makes the graining of wood his vocation. He is led to inquire into various sciences, because the general principles of his art link it with all sciences ; and from the standpoint of his own intuitions, learning, and experience in graining, he is ready to give his opinion of genius in music, painting, sculpture, poetry, and other arts. And all this we see in the light and modesty and good-will and force of his expression. Many of his brethren of the paint-brush, we fear, bear a very different expression.

The same holds with respect to all employments, teaching among the rest. One of the proofs to our mind that teaching is a science—though in general a science amazingly unstated—is that we find among teachers some whose talk is like the grainer's, and whose expression, like his, has in it light and modesty and good-will and force. Nine out of ten such are, like the grainer, working scientifically. The tenth is drudging with a dissatisfied look among his brother drudges, who are teaching solely for their bread and butter, and who do not rise in the profession above the level of a mere unscientific employment. Like the grainer's drudging brethren, these bear peculiarities which their drudgery stamps upon them. Schoolmaster-ish and schoolma'am-ish are epithets which readily explain them to the popular apprehension.

A teacher of this sort is easily recognized. His peculiarities are pronounced and aggressive. He has a look of bustling importance, a patronizing demeanor any thing but agreeable to the victim, who perceives the vacancy of the patron. He is fully possessed with the belief that he is a personage of vast importance, because of a vague idea that on teachers as a class rests the responsibility of shaping the rising generation. He is wiser in his own eyes than seven men who can render a reason, and jealous of any one who knows more than he does—a peculiarity, it is true, somewhat inconsistent with the foregoing. He has a disposition to order folks around as though they were unruly boys. He has a dry, harsh tone of voice; a lack of unction in reading, conversation, and set discourse; an appearance and demeanor varying from the grotesque imitation of a boy to the grotesque imitation of a philosopher. But it is needless to pursue the analysis. These peculiarities are proverbial as *teachers'* peculiarities. But they mark the absence, rather, of the true teacher. They have come to characterize teachers as a class, because to so many who bear this name, teaching is only an occupation. The calling suffers in reputation from the preponderating influence of those to whom it is merely a make-shift, a stepping-stone to something else, a temporary employment which unfortunately too often becomes a permanent employment. The few to whom teaching is a vocation, and who are striving in an unorganized way to raise it to the rank of a profession, are outnumbered and overborne by those who, though they prate of the dignity of the work, do little else than degrade the workmen in the public estimation.

EDUCATIONAL INTELLIGENCE.

UNITED STATES.—The summer holidays, with their attendant teachers' conventions, are ended. The proceedings of the latter naturally constitute the staple of educational news for the month. But the number of such meetings has been too great to allow of special reports here of all of them, even if all were of sufficient general interest to make such reports desirable. Besides, the proceedings of the several conventions have been published as usual in the local papers, with the usual display of names and titles, and lavish use of complimentary adjectives; so that all the participants are, or ought to be, satisfied.

No meeting, so far as we have seen or heard, has differed materially from the corresponding meeting of last year, or the year before, or the year before that, or of any year since the teachers' convention was invented. Each meeting has afforded many teachers an opportunity to extend their acquaintance among their fellow-laborers, and so none have been in vain. Old stagers of the Eminent-Educator sort have had another opportunity, or series of opportunities, for trotting out their hobbies, and have not failed to give them their much enjoyed annual airing. The flow of mutual admiration has had, like the Nile, its period of flood; and many men have returned to their homes happily conscious of having done the handsome thing by the "eminent" and "illustrious" and "scholarly" speakers who preceded them, and of receiving like favors in return—the slimy deposits of Nile mud being not more unctuous or more impartially distributed than the deposit of compliment from the turbid flow of discussion, courteously so called. A great many aspirants to educational notoriety, and as many more who have attained it, have had their say on the great questions of the day, and have congratulated themselves and their brethren in the profession on the recurrence of another privilege of thus meeting and comparing notes—which, somehow, nobody thought to bring. Here and there a modest, conscientious, and thoughtful worker has found a chance to lift up his voice against what seemed to him to be evils in the professional practice, or to urge the adoption of more sensible and practical means and methods in the pursuit of the great object which all claimed to have at heart. So, in spite of all that has been misplaced, ill-timed, and trivial, not a few young teachers have gone home conscious of higher aspirations, and possibly of having added somewhat to their store of knowledge and experience—a hint or two, it may be, that will be fruitful for their professional well-being. The book-makers, publishers, and peddlers also have enjoyed a period of seed-time, and have returned, like the Egyptian farmer, from casting their bread upon the waters, hoping to receive it again, with large increase, after (not) many days.

The time of professional dissipation is too recent to allow of any serious consideration of the uses and abuses of teachers' meetings—what they do and what they leave undone. This must be left for greater deliberation and cooler weather. It will suffice, for the present, to notice briefly the proceedings of the two conventions nearest at hand.

The thirty-ninth annual meeting of the AMERICAN INSTITUTE OF INSTRUCTION was held in Pittsfield, Mass., on the 5th, 6th, and 7th of August. The attendance was small, and the proceedings, on the whole, were rather dull—unusually dull, many thought. This was owing partly to the unfavorable weather, partly to the lack of ladies, but chiefly to the fact that the principal speakers were veterans in the work, whose opinions have been public property for these many years. And what tended still more perhaps to make the discussions stale and unprofitable, was the fact that the speakers seemed unable to realize that their hearers, as a general thing, were quite as familiar with educational commonplace as themselves. Besides, nearly every one seemed afraid that he might hurt somebody's feelings if he said any thing definite; so gave himself freely to harmless generalities, some of which were glittering, but most of which were not. And when a member did allow his zeal to carry him so far beyond the staid decorum of the assembly as to make a point against any real or supposed professional evil, he was promptly remonstrated with: almost any sort of talk being preferred to plain talk at the subject under discussion. The subjects, for the most part, had been carefully framed to allow any number of speakers to talk all day without hitting anywhere near each other, so what was the use of disturbing the harmony of the meeting by saying things that somebody would have to dispute?

Twenty-five years ago a meeting of the Institute was held in Pittsfield, and one of the subjects then discussed was the first on the programme for this year, namely—"Defects in our Present System of Education." A comparison of the discussions on the two occasions might afford a fair estimate of the progress made by the Institute during the intervening quarter century. We hope to make such a comparison some day, though we fear that it will not show quite so great an advance in educational wisdom as we are wont to boast of. We are not prepared, however, to say that the discussions of the last meeting represent the highest stage of the educational thought and practice of the country.

The Paper read by Mr. Collar of the Roxbury Latin School, on *The Classical Question*, was perhaps the only one that showed the proper spirit of earnestness and painstaking preparation. It was in every way worthy of the occasion—in fact a good example of the kind of work and of the style of execution that should characterize the work of such a convention. The discussion which immediately followed was, in the main, trivial. At another session, however, the subject was again taken up, calling out some sensible remarks, especially from President White of Cornell University. Quite a sharp practical joke was played upon the Institute the second day by the Convocation at Albany, and taken in the best of humor. At the close of the Albany meeting a large number of prominent New Yorkers came over, adding greatly to the interest of the last day's proceedings. As was proposed last year, the constitution of the Institute was amended so as to make women eligible to membership.

The twenty-fourth annual meeting of the NEW YORK STATE TEACHERS' ASSOCIATION, held at Owego July 21st, 22d, and 23d, was on the whole quite interesting. The impossible order of exercises arranged for the several sessions was carried out as closely as could have been expected. Much, of course, had to be omitted; and unfortunately

the omitted parts were chiefly those that promised to be of greatest interest and importance. The reports which called out the most discussion were Commissioner Lang's on *Compulsory Education*; Deputy Superintendent Barr's on *Educational Work and Wants*; Mr. French's on *Class Recitations*; Mr. M. M. Merrill's on *Text-Books*; and Mr. Johonnot's on *Culture for Women*. The last was the occasion of much silliness; and as it afforded an excellent opportunity for would-be philanthropists to advocate a foregone conclusion with the air of an innovator and the zeal of a reformer, without any danger of the unpopularity that follows the teaching of new things, the acknowledged right of women to all the culture they want was argued *ad nauseam*. The inevitable Ross, of course, was on hand, as was also his special horror, Miss Susan B. Anthony, who, in view of the nonsensical resolution proposed by Mr. Johonnot, could *almost* say—some thought it a pity she could not say it without that restriction—"Now lettest thou thy servant depart in peace." Mr. Johonnot evidently meant well; but in spite of the action of the Association, we seriously doubt whether thoughtful people, generally, can subscribe to the unqualified resolution—"That the terms of admission to schools of every grade and kind should have reference solely to culture and training; and that all restrictions founded upon the assumed unfitness of any person or class of persons [fools, maniacs, criminals, and so forth, not excepted] is unphilosophical in principle and impolitic in practice."

The discussion of Mr. French's report turned mainly on the propriety or impropriety of criticising text-books before pupils. Mr. French opposed the practice. The characteristic subjection of American teachers to text-book authority, was strikingly manifested throughout the discussion.

While some were of the opinion that the assertions of the text-books might sometimes be questioned under aggravated circumstances, no one thought it advisable to make a practice of it. On all sides it was tacitly admitted that in the class-room the object of primary importance is, not truth, but the book. If the teacher cannot subscribe to an author's opinions, he ought to select some other man's book that he can agree with, and teach that—the pupil being expected in all cases merely to receive without question the ready-made conclusions presented to him. Training in critical search after truth, the cultivation of a truth-seeking disposition rather than a mere greed for second-hand information, was not thought of, or if thought of, was not considered of sufficient importance to have any practical bearing worth mentioning on the question in hand. As this was about the only question approached by the Association from the teacher's point of view, we should have been better pleased had it received that attention which its importance would seem to warrant.

On the last day of the meeting Mr. Valentine, of Brooklyn, took occasion to protest against what he considered a drifting of the Association from its true mooring. He claimed that it had ceased to be a teachers' meeting, and become a sort of educational fair run by superintendents, commissioners, and book-agents, especially the latter. The officers were mainly men with private axes to grind; so were the members of the several committees, and also, for the most part, the men who had been appointed to prepare reports. These charges were of course promptly denied by the president and others, though Mr. Valentine's position

seemed to be strongly taken. Once a teacher, always a teacher, appeared to be the official opinion of the Association. And though a man does quit the school-room and become a "Leading Educator," he in no way forfeits his right to the high places in teachers' assemblies. Besides, the president claimed, and not without a show of reason, that the Association could not be carried on without the aid of these honorary members of the profession. A large number of acting teachers, he said, were first invited to prepare reports, but, "through indifference or laziness," they declined. The president was therefore compelled to look elsewhere for aid. That the teachers were not overmuch inclined to take an active part in the exercises is evident (though their reason for it is not) from the fact that even in the discussions, which were certainly open to all, the teachers were content to remain in the background. The discussions were monopolized by less than a score of persons, of whom perhaps five were acting teachers: we are sure that one or two were. The cause of this inaction on the part of the teachers was not apparent. Was it modesty, or indifference, or what?

The next meeting of the Association will be held at Ithaca.

CURRENT PUBLICATIONS.

METHODS of observation of meteorological phenomena have been much improved within the past few years; many new instruments have been devised; and a vast number of new facts have been recorded. All this material Mr. Loomis has carefully collated, and the result is the best book¹ in the language in this department of science.

The tables, of which there are thirty-six, will render the book invaluable to the observer. Something has also been gained to the cause of popular instruction. The work is free from technicalities, and thus well suited to afford the general reader a knowledge of the data from which philosophers reason to account for meteorological changes. It shows, also, how far old popular notions about the weather are sanctioned or refuted by long-continued scientific observation.

The plates and other illustrations, though not well executed, are sufficiently numerous to make the work suitable as a text-book, and a good one, for the higher grade of schools. The clear, logical method of Dr. Loomis is apparent in this as in his former works.

THE scarcity of elementary text-books of Blow-pipe Analysis² has been relieved by the publication of a revised and somewhat enlarged edition

¹ A TREATISE ON METEOROLOGY, with a Collection of Meteorological Tables. By ELIAS LOOMIS, LL.D. New York: Harper & Brothers.

² "THE PRACTICAL USE OF THE BLOW-PIPE." Second Edition. With Appendix and copious INDEX. By GEO. W. PLYMPTON, A. M. New York: D. Van Nostrand, pp. 88. \$2.

of the excellent little compilation of Sanders, some time out of print. This manual probably has no superior in the English language as a text-book for beginners, or as a guide to the student working without a teacher. To the latter the many illustrations of the utensils and apparatus required in using the blow-pipe, as well as the fully illustrated description of the blow-pipe flame, will be especially serviceable.

THOSE who have begun the study of American insects with the helps heretofore at the command of a student of limited means, will appreciate the value of the work now being published by Dr. Packard, Editor of the *Naturalist*. This, under the title "Guide to the Study of Insects,"² is designed to be at once a popular introduction to the study of entomology, and a treatise on the injurious and beneficial insects of the country. The *Guide* will be published in eight or ten monthly parts, in 8vo form, on superior paper, with upward of five hundred illustrations drawn and engraved by our best entomological artists, and almost exclusively from American insects.

The first part contains sixty pages devoted to the anatomy and physiology of insects, special and comparative, profusely illustrated; description of the nature and habits of insects; how they walk, fly, breathe, grow, reproduce their kind, etc., etc. The succeeding parts will contain chapters on the different orders of insects, their geographical distribution, their geological history, habits, metamorphoses, etc., with special directions to the observer and collector. The language is plain, and as free from technicalities as possible. The typography and press-work are excellent.

WE are glad to see reprinted in this country Roscoe's excellent little text-book of Elementary Chemistry.⁴ We have frequently recommended the English edition as decidedly the best book in existence for classes wishing to take up the study scientifically—as is too seldom done in this country; but the difficulty of obtaining the work, and its high price, have heretofore stood in the way of its being generally adopted. This objection is now removed, and we hope to see the work as widely used as its merits deserve. Mr. Roscoe is not only a superior chemist but a first-rate teacher, two qualifications that do not often go together. He is at once a master of the science, and a master of the art of presenting its facts and principles in a strictly scientific and yet graceful and interesting manner. His "Lessons" make the most readable compend of modern elementary chemistry that we have seen; and the pupil who shall have studied it carefully, will not be in danger of stumbling at the first sentence of a modern chemical paper, as he is likely to do if familiar only with the old nomenclature, as given in most of our text-books. We regret to miss in the reprint the author's beautiful colored plate illustrating spectrum analysis. It was one of the most valuable features of the book.

² "A GUIDE TO THE STUDY OF INSECTS, for the Use of Colleges, Farm Schools, and Agriculturists." By A. S. PACKARD, M. D. Salem, Mass.: Press of the Essex Institute. Subscription price, 50 cents a part.

⁴ LESSONS IN ELEMENTARY CHEMISTRY: Inorganic and Organic. By HENRY E. ROSCOE, B. A., F. R. S. New York: Wm. Wood & Co. pp. 383. \$1.50.

THE NEW YORK TEACHER,

AND

AMERICAN EDUCATIONAL MONTHLY

OCTOBER, 1868.

SECONDARY EDUCATION IN GERMANY.

II.

THE Boston Latin School, to which we now address ourselves, having lowered its age of admission so as to compete with the Grammar Schools, is obliged to join their studies to the classical up to the very last year of its course. Its programme, being arranged as if for boys of ten, to begin with, is none the less at a disadvantage, when compared with that of the *Gymnasium*, because it is really pursued by boys of thirteen and upwards. The regular course of the Latin School is six years, but meritorious scholars may be advanced; and, *per contra*, the less intelligent may be kept back. In the *Gymnasium* every class except the two lowest is likely to occupy two years in passing. The Latin School total and its derivation have been already stated. The Bremen *Gymnasium*, 1867-68, drew 46 pupils from the *Vorschule* and 7 from other sources, while it graduated 8 to the universities, and returned 15 to civil life, 5 to the *Handelsschule*, and 13 to other institutions of learning.

CLASSICAL SCHOOL (*GYMNASIUM*.)

SIXTH CLASS.

(Course, One Year—30 Hours of Recitation a Week.)

1. *Religion*.—2 h. w. Review of O. T. Biblical history, with special regard to the didactic and prophetic Scriptures. Life of Jesus according to Matthew and John, especially His sermons and parables. Verses (from the Sermon on the Mount) and hymns appropriate to the chief church-festivals.

2. *German*.—3 h. w. Grammar: Review of the inflections, the fundamental rules of syntax, the simple sentence. Compositions; reproduction of stories and descriptions, analysis of (epic)

BOSTON PUBLIC LATIN SCHOOL.

SIXTH CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *Religion*.—Same exercises as at all the public schools.

2. *English*.—Grammar. Reading. Spelling. Declamation.

poetry after hearing it; recital of events, such as holiday journeys, walks and festivals. Practice in committing and repeating simple poems of an epic character, selected by the teacher and distributed among the pupils.

3. *Latin*.—9 h. w. Grammar: Review of etymology, with the exceptions added. The "strong" and irregular conjugations. Characteristic constructions of syntax (accusative with infinitive, ablative absolute, gerund), as well as the chief case-rules. 3 h. Exercises from the text-book; likewise oral translations. Extemporalia. 2 h. Reading from the text-book; portions of Roman history. 4 h.

4. *Geography*.—2 h. w. Elements of mathematical and physical geography. Physical and political geography of Asia and Australia.

5. *Accounts*.—3 h. w. Review of the four operations in abstract and concrete numbers, and in fractions. Relation of the part to the whole in abstract and concrete numbers.

6. *Writing*.—2 h. w.

7. *French*.—3 h. w. Grammar and translating according to the text-book. Written exercises, ditto. Reading of the easier dialogues in the Reader.

8. *History*.—2 h. w. Greek history, to the death of Alexander the Great.

9. *Natural History*.—2 h. w. Introduction to physiology. Natural history of mammalia and birds.

10. *Drawing*.—2 h. w. Straight lines in different directions; combined into symmetrical figures. Curvilinear and mixtilinear figures, largely ornamental. The first exercises to be drawn in connection with printed outlines, the rest free in outline. Together with them, elementary instruction in form.

FIFTH CLASS.

(Course, One Year—30 Hours of Recitation a Week.)

1. *Religion*.—2 h. w. Review of the foregoing cursus. Lives of the Apostles, especially the missionary travels of Paul; selections from the apostolic epistles. Bible verses and hymns.

2. *German*.—3 h. w. Grammar: Compositions as in the foregoing class, but progressively more difficult. Practice in committing and repeating select poems, chiefly of an epic character.

3. *Latin*.—9 h. w. Grammar: Review of the irregular verbs, prepositions, the more difficult pronouns. Case-rules. Oral translation from the

3. *Latin*.—Grammar. "Lessons." Reader.

4. *Geography*.—"Mitchell's Geographical Questions."

5. *Mathematics*.—Mental Arithmetic.

6. *Writing*.

FIFTH CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *Religion*.—As above.

2. *English*.—Grammar. Reading. Spelling. Declamation.

3. *Latin*.—Grammar. Prose Composition. Written translations. Viri Romæ. Cornelius Nepos.

text-book. 3 h. w. Prose Composition. Extemporalia, from dictation, on the easier syntactical rules derived from the readings. 2 h. w. Readings from Cornelius Nepos. 4 h. w.

4. *Accounts*.—3 h. w. Proportions, abstract and applied. Mixed problems. Reckoning of periods.

5. *Writing*.—2 h. w.

6. *French*.—3 h. w. Grammar and translations according to the text-book. Exercises on the same. Reading of *Anecdotes and traits historiques* from the Reader.

7. *History*.—2 h. w. Roman.

8. *Geography*.—2 h. w. Africa. America.

9. *Natural History*.—2 h. w. Reptiles, fishes, and the lower orders of animals.

FOURTH CLASS.

(Course, One Year—30 Hours of Recitation a Week.)

1. *German*.—3 h. w. Grammar: Compositions like those in the preceding class, but with exercises in style—argumentative, demonstrative and comparative, on subjects previously appointed by the teacher; with free descriptions of personal experience in the form of letters. Practice in committing and repeating pieces as in the Fifth Class, with a wider range.

2. *Latin*.—9 h. w. Grammar: Review of the "strong" verbs and of the case-rules. Moods. Prose composition. Oral translations from the text-book. Extemporalia on the foregoing rules of syntax. 4 h. w. Reading: *Cæsar de bello Gallico*. 5 h. w.

3. *Greek*.—5 h. w. Etymology, to the verbs in μ . Exercises.

4. *French*.—2 h. w. Irregular verbs. Reading of select historical pieces from the Reader.

5. *Mathematics*.—3 h. w. Geometrical bodies and figures. Elementary geometric, particularly planimetric, ideas illustrated. Lines, angles, and plane figures. Elements of the circle, triangle, conjunction of triangles, parallelogram and trapezium, by the text-book.

6. *English*.—2 h. w. Grammar. Etymology. Committal of the vocabulary and of pieces read. Dictation in spelling.

7. *History*.—2 h. w. The Middle Ages.

8. *Geography*.—2 h. w. Germany and the small adjacent countries.

4. *Mathematics*.—Arithmetic: "Colburn's Sequel."

5. *Writing*.

FOURTH CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *English*.—Grammar. Reading. Spelling. Declamation.

2. *Latin*.—Grammar. Written translations. Prose composition. Cæsar's Commentaries (*de bello Gall.*)

3. *Greek*.—Grammar. "Sophocles' Greek Lessons."

4. *French*.—Grammar. Exercises in speaking and reading French with a native French teacher.

5. *Mathematics*.—Arithmetic: "Colburn's Sequel."

9. *Accounts*.—2 h. w. Reckoning of tare, interest, rebate, discount, profit and loss, etc.

10. *Drawing*.—2 h. w. (From this class upwards optional, and combined in a single recitation). Further drawing after solid models; ornamental modelling in plaster. Elements of geographical projection; draughting. Head-modelling in plaster. Free landscape drawing. Law of harmony in colors.

THIRD CLASS.

(Course, One Year—30 Hours of Recitation a Week.)

1. *German*.—2 h. w. Grammar: Prosody and metre; versification; examples learned by heart. Compositions, as in the previous class, but with more argumentative subjects. Exercises in committing and repeating. Poetical pieces chosen for their metrical form and connection with the grammatical=rhetorical instruction.

2. *Latin*.—8 h. w. Review of cases and moods, after Zumpt; extemporalia on the rules in question, from dictation. Prose composition. *Cæsar Bell. Gall.* and *Civil.* Excerpts from Ovid's *Metamorphoses* and *Fasti*. Prosody and metre.

3. *Greek*.—6 h. w. Grammar: Review and analysis of the etymology, including the Homeric dialect. Etymological extemporalia. Prose composition. 3 h. Reading: Xenophon's *Anabasis*. Homer's *Odyssey*.

4. *French*.—2 h. w. Grammar: Signification of the prepositions, position of words, and tenses. Reading from a text-book.

5. *Mathematics*.—3 h. w. Arithmetic: Decimal fractions. Introduction to algebra. The four operations with algebraic quantities. Powers. Geometry: Comparison of the parallelogram, triangle, and trapezium in respect to their area; the right angle and square. Measurement of right-lined figures. Proportions of the lines and sides of a triangle. Similarity. Relation of areas; collateral relations of triangle and square. Solving of geometrical problems.

6. *English*.—2 h. w. Marryatt's "Children of the New Forest." Vocabulary and irregular verbs. Grammar: Etymology continued. Translations into English.

7. *History*.—2 h. w. Modern times. Review of the history of Antiquity and the Middle Ages, by tables.

THIRD CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *English*.—Grammar. Reading. Spelling. Declamation. Composition.

2. *Latin*.—Grammar. Written translations. Prose composition. Ovid's *Metamorphoses* (excerpts).

3. *Greek*.—Grammar. Prose composition. Reading from a text-book.

4. *French*.—Grammar and practice as in Fourth Class. Reading: *Le Grandpère*.

5. *Mathematics*.—Arithmetic: "Columb's Sequel." Algebra.

8. *Geography*.—2 h. w. Political geography of the non-German European countries, with reference to ancient geography.

9. *Natural Science*.—1 h. w. In summer: Botany, according to Linnæus. In winter: Mathematical geography.

LOWER-SECOND CLASS (*Unter-Secunda*.)

(Course, One Year—28 Hours of Recitation a Week.)

1. *German*.—2 h. w. Species of rhetoric. Compositions; subjects at pleasure. Brief rhetorical exercises. Practice in reciting poetical pieces in connection with the lessons in rhetoric.

2. *Latin*.—8 h. w. Grammar: Recapitulation of moods and tenses from Zumpt, and the chief points of the so-called *Syntax ornata*. Extemporalia on the same. 3 h. Reading from Ovid's *Fasti*, Virgil's *Æneid*, Cicero's easier speeches, especially the *Catilinariæ*; *De senectute*; *De amicitia*. Livy.

3. *Greek*.—6 h. w. Review of grammar, and practice in certain syntactical rules. Herodotus. Homer's *Odyssey*.

4. *French*.—2 h. w. Grammar: Syntax of article, adjective, pronoun; inflection of participle. Reading from text-book.

5. *History*.—3 h. w. History of Antiquity.

6. *Mathematics*.—4 h. w. Arithmetic: Root quantities, extraction of square and cube roots, reduction of literal expressions by elimination of fractions. Geometry: Circle. Solving of geometrical problems.

7. *English*.—2 h. w. Grammar: Syntax. Dictations, extemporalia. Reading: Macaulay's Biographical Essays.

8. *Natural Science*.—1 h. w. Chemistry: First ideas. Oxygen, hydrogen, nitrogen. Mathematical geography: Previous course continued.

UPPER-SECOND CLASS (*Ober-Secunda*.)

(Course, One Year—28 [or 30] Hours of Recitation a Week.)

1. *German*.—2 h. w. Figures of speech. Compositions of an argumentative nature. Exposition of scientific or literary treatises by Lessing, Schiller, Herder, etc. Recitations as in foregoing class, interspersed with original essays.

SECOND CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *English*.—Grammar. Reading. Spelling. Declamation. Composition.

2. *Latin*.—Grammar. Prose composition; translations from English into Latin. Ovid's *Metamorphoses*. Virgil, beginning with the *Æneid*.

3. *Greek*.—Grammar. Prose composition. "Felton's Greek Reader."

4. *French*.—Grammar.

5. *History*.—Elements of history.

6. *Algebra*.

7. Penmanship.

FIRST CLASS.

(Course, One Year—24 Hours of Recitation a Week.)

1. *English*.—Declamation. Composition.

2. *Latin*.—8 h. w. Reading: Virgil's *Georgics* and *Æneid*, select odes of Horace, with rules of metre. Easy pieces from Terence and Plautus; Cicero's Letters; orations (*pro S. Roscio Am.*, *pro lege Manilia*, the *Verrine*). Livy. Sallust. Nature and significance of the position of words.

3. *Greek*.—6 h. w. Reading: Plato's *Apologia Socratis* and *Crito*. Easy orations of Lysias. Herodotus. Homer's *Iliad*. Grammar. Review of former course. Moods.

4. *French*.—2 h. w. Reading: Recent dramatic pieces by Scribe, etc. Conclusion of syntax. Themes.

5. *History*.—3 h. w. History of the Middle Ages.

6. *Mathematics*.—4 h. w. Arithmetic: Equations of first degree, with one and several unknown quantities; logarithms; equations of second degree. Geometry. Plane trigonometry, stereometry, as far as measuring areas and solid contents. Solving of problems.

7. *Hebrew*.—2 h. w. (Optional, in connection with the First Class.) Grammar. Extracts from the historical books of the O. T., and from the Psalms.

8. *English*.—2 h. w. Reading. Grammar: Syntax continued; translations. Dictations, free compositions.

9. *Natural Science*.—1 h. w. Chemistry: Metalloids.

2. *Latin*.—Grammar. Prose composition. Ovid's *Metamorphoses*. Virgil. Cicero's Orations. Latin verse-making.

3. *Greek*.—Grammar. Prose composition. Greek Reader.

4. *French*.—Grammar. Composition.

5. *History*.—Elements of history. Ancient history and geography.

6. *Mathematics*.—Geometry. Algebra (?)

FIRST CLASS.

(Course, One Year—90 [or 92] Hours of Recitation a Week.)

1. *German*.—4 h. w. History of literature. Compositions on subjects requiring reflection, *ad libitum*; description of historical or poetical characters; analyses of great epic and dramatic poems. Recitation of original essays in German and Latin.

2. *Latin*.—8 h. w. Original compositions, especially on ancient history, alternated with oral discourses, as in German. Weekly extemporalia. Reading: Tacitus, especially the first books of the *Annals* and *Histories*. Cicero's more difficult orations (*pro Cæcina*, *pro Cluentio*, *pro Plancio*, *pro Milone*, *Philippica*). Cicero's rhetorical books. Horace's Satires and Epistles, Odes and Epodes, excerpted. Select poems from elegiac poets and from Juvenal. The recitations mostly in Latin. Private readings regulated in the school: Cicero's philosophic writings, Quin-

(No corresponding class in the Latin School—as might indeed have been said of Ober-Secunda.)

tilian, Tacitus's *Agricola* and *Germania*, Plautus (*Captivi*, *Trinummus*, and *Miles*), Terence.

3. *Greek*.—3 h. w. Sophocles' *Ajax*, *Antigone*, *Œdipus Rex*, *Œdipus Col.* Occasionally a tragedy of Euripides or Æschylus. Plato's *Republic*. Thucydides. Orations of Demosthenes. Homer, cursorily, or as private reading. Review of the entire grammar. Occasional extemporalia.

4. *Hebrew*.—2 h. w. Optional.

5. *French*.—2 h. w. Reading of classic or recent poetry, with literary-historical introductions. Translation, as extemporalia, of a German history of French literature, into French.

6. *English*.—2 h. w. Reading: Macaulay's *History of England*, I., p. 280. Byron's *Childe Harold*. Milton's *Paradise Lost*. Shakespeare's dramas, entire. Practice in style and Anglicisms. Extemporalia.

7. *History*.—3 h. w. History of modern times.

8. *Mathematics*.—3 h. w. Practical review of algebra to equations of second degree. Equations of second degree with several unknown quantities. Arithmetical and geometrical progression. Compound interest. Continued fractions. Diophantine equations of first degree. Permutations, variations, combinations. Binomial theorem. Doctrine of chances. Geometry: Review. Trigonometrical problems. The second part of stereometry, with conic sections.

9. *Physics*.—2 h. w. Properties of bodies. Free fall. Statics and mechanics. Heat, light, electricity, magnetism.

10. *Singing*.—Optional for the entire *Gymnasium*. Instruction five hours weekly, devoted to solo, quartette, or chorus practice.

Only in a few points, it appears, are the two courses compared above parallel. From the first the *Gymnasium* is the fuller, and at the end it has far outstripped the Latin School, and overlapped the College cursus. Extemporalia—the most effective means of teaching the grammar of any language—which are employed in the lowest classes of the *Handelsschule* and *Gymnasium* respectively, and so upwards, are first encountered in College. The *Anabasis*, *Odyssey*, *Iliad*, the writings of Herodotus and Thucydides, are read by the pupils of the Latin School, if at all, only as extracts in the Greek Reader. Lysias, Demosthenes, Plato, Livy, Horace, Plautus, Terence, Tacitus, and Juvenal, are College studies exclusively, as is all of Cicero but a few orations.

Zumpt's Latin Grammar is a College text-book, though Andrews and Stoddard's Grammar, based upon it, is used from the start in the Latin School. Logarithms are first used in College. Hebrew is with us studied only in Divinity schools. Natural history, which appears even in the *Vorschule*, is scarcely taught at Harvard College—perhaps we should say is not taught at all, directly. Botany and chemistry, finally, are College studies.

The changes necessary to bring the *Gymnasium* up to the North German standard—changes which will accordingly be made—are: extension of the instruction in Greek in the lower classes; additional Greek prose composition and Latin extemporalia, and adoption of Latin as the language of instruction (*Unterrichtssprache*) in the upper classes.

Light calisthenics are a part of the prescribed course of the Boston Grammar Schools, military drill of the High and Latin. At Harvard College, exercise in the gymnasium is purely optional, and seems to be much the same in the Bremen *Hauptschule*, which merely furnishes the apparatus and keeps account of the attendance. Thus, in the *Vorschule*, but 127 pupils out of 299 pursued gymnastics in the summer semester; 133 out of 282 in the winter. These figures for the *Handelschule* were: 67 out of 180, and 74 out of 197. For the *Gymnasium*: 80 out of 199, and 107 out of 217.

To give a complete idea of the Bremen Programme, we must add that, after detailing the studies of each class, as shown above, the names of the teachers in each study are recorded, followed by the list of *Hilfsmittel* (text-books and books of reference). The report for each department of the *Hauptschule* closes with a *Chronik*, in which the history of the school is carried forward from the issuing of the last programme—a most admirable means of preserving the unity of the institution. Here are recorded the health statistics of pupils and teachers, the deaths, withdrawals, graduations, changes of instructors, etc. There are several instances before us of the death, and retirement (*in den Ruhestand*) with pensions, of teachers; and as a specimen of long service in the profession, and of preparation for it, we may mention the retirement of Herr M., a teacher in the *Vorschule* for twenty-eight years (1840–1868), of whom it is said that after finishing his theological and philological studies, he first taught for one year as a private tutor, then conducted the public school at V., and from there was called to the post whence he now retires for honorable repose. Of how many a grammar-school teacher in Boston or other of our cities could such a preparation be affirmed? The teachers in the Boston High and Latin Schools must be graduates of some college in good standing.

It remains to remark, for the sake of perfect fairness, that in order to estimate the amount of work done, in the schools under comparison,

of the kind that is really essential in our estimation, the hours devoted to the study of the Bible and to singing, and in the *Handelsschule* to penmanship, should be deducted from the number of recitation hours per week assigned to each class. On the other hand, the full superiority or deficiency of either course cannot be shown until the hours devoted to each study in the Boston courses are set forth as accurately as in the Bremen Programme. And finally, for the practical working of the Prussian school-system, we would refer the reader to some very valuable articles from an eye-witness that have appeared in the *Iowa Instructor* since the beginning of the present year.

MANUAL LABOR SCHOOLS.

THESE, except in the form of charity establishments or juvenile reformatories are almost unknown among us. It is true, there are a few young ladies' seminaries where the pupils are initiated into the mysteries of the housekeeping department so as to diminish in some degree the expenses of tuition. There are opportunities, also, in some of the preparatory schools for boys, and even in colleges, where indigent students can aid themselves in obtaining an education by taking care of the buildings and grounds. But no well-developed system of labor in connection with study has, to our knowledge, secured sufficient foothold in practice to merit popular favor.

The tendency is rather to set a light estimate upon any course of training which aims to make the useful employment of the hands co-ordinate with the healthful occupation of the mind. As a consequence, our children early acquire a distaste for manual labor, and as they grow up, many of them are led to entertain a horror of anything like hard service. Bone and muscle are not sufficiently called into exercise in our present system of education. The brain is overworked in too many instances at the expense of other parts of the physical structure.

The boys and girls of generations past were not so trained. The children were once almost universally employed in the family, on the farm, in the shop, and about the house. Boys were early apprenticed to a trade. They seldom grumbled at this, for they were taught to take a practical view of life, and so they toiled through the trials of their minority with cheerfulness, and came forth in due time men endowed with a good share of pluck and energy, which was the best capital they could have. Girls were once, not as now, ladies at fourteen—but women, capable of doing anything that needed doing in the house. We have in

mind a hale specimen of this class, now past ninety years of age, who boasts that when a girl, she used to do the work for nearly a dozen younger ones of the household, and every Saturday, saddling her horse, would travel several miles to Old Harvard, to get the weekly washing of her brother, then in college. Most young women of the present day would consider this a hardship beyond endurance.

The education of boys in this respect, we think, is particularly deficient. Boarding and family schools are multiplying every year, in which the sons of the wealthy are placed with the assurance that the best of instruction shall be imparted, and the highest advantages for mental culture enjoyed. This is all very well so far as it goes. Doubtless the object is gained as truly as it can be by mere study, joined with the ordinary periods of recreation. But the stimulus arising from the consciousness of doing something of immediate use, by direct exertion, is wanting to the child. Even though the physical development of a pupil may be secured by such expedients as base-ball, boating, and gymnastics, the equipment for a true manhood cannot be found in these exercises, undertaken mainly for sport. It is obvious that the sawing of a stick, in both the moral and physical aspect of the case, would prove more beneficial than simply going through the motions of sawing in a gymnastic exercise. The boy who harnesses his team, or drives a straight furrow in the field, has an important advantage over one who must call the hired man to groom and saddle his horse before he can take his morning ride for recreation.

Now, if we may venture an assertion concerning the future from our present point of observation, we predict that boys' services, especially in the department of agriculture, will continue to become more and more in demand, and will be better appreciated. The high rate of laborers' wages and the scarcity of help since the war, oblige the farmer, and even the mechanic and tradesman, to turn to other sources than those on which they have relied. The multiplication of labor-saving machines also makes it possible for smaller hands and lighter frames to be useful in what was formerly accounted the heavier kinds of work.

It has always been the practice in our public institutions to give the inmates more or less employment in some branch of industry. Where children are detained within the establishment for a lengthened period, as in reform-schools, they are often taught some mechanical trade, and their time during each day is divided between such employment and their books. In other cases, boys and girls are put to places in the country where they are expected to engage in the different kinds of manual labor. The demand for such children as these, of suitable age for service, is continually increasing; so that it is difficult to find in many of the public institutions an adequate supply, answering all the conditions.

It is astonishing to see how much labor children can perform if rightly managed, and how readily they may be made to fall from the corrupt associations of an indolent or vagabond life into habits of industry. We came across one of this class the other day,—a little fellow of less than a dozen years. He was at work in the field with a yoke of oxen. His face lighted up with a perfect glow of satisfaction when allusion was made to the business in which he was employed. He had done “lots” of ploughing this spring, he said, all alone. It was plain that manual labor had developed something more than muscle in him; for, previous to his indenturing, he had not been known as a particularly energetic boy.

If remunerative employment is provided for the young, either in city or country, there will necessarily be a certain class to avail themselves of its privileges. The poor are driven to it. The middling classes seek it for the purpose of making money. There may be danger in such cases, as in large manufacturing towns, that purely intellectual pursuits will be neglected. It may be necessary even to pass laws compelling parents to keep their children unemployed during a portion of the year, in order that they may attend school. But generally speaking, the danger is in the opposite direction. Education, in the popular sense, is an obligation, physical exercise as a recreation is likewise a pleasant duty,—but work is a bore. There is an aristocratic element in society which demands that all labor of the hands shall be placed in the rank of servile drudgery.

Doubtless the newly established agricultural colleges will do something toward popularizing the system of education which has its basis in a judicious application of theories to the work of every-day life. Young men, even from the families of the wealthy, may, with this kind of instruction, find pleasure in working out with the spade and pick answers to queries proposed in the class-room.

But schools of a lower grade founded on a similar plan, are also needed—home establishments, where labor may be systematically joined with study. A moderate-sized farm will furnish employment, four or five hours a day, for a dozen or twenty boys, under the superintendence of a competent instructor, and in rainy weather or during the winter their mechanical genius might be exercised in the construction of useful and ornamental articles, or in such repairs as are constantly required on a farm. Four hours a day for application to books, and four for labor, with the remainder for recreation and repose; is, in our opinion, a very good division of time. Study sharpens the appetite for labor; and *vice versa*, when thus methodically joined. If this course could be pursued through the year, with occasional short intermissions and holidays, it would be an improvement on the six or seven hours of study now required in schools for a certain term, followed by a long vacation, in

which the child forgets much that he has learned, and is often wearied with having nothing to do.

It will be difficult, perhaps, to make fathers and mothers believe all this, and even more difficult to induce educators to adopt the plan. The field, we acknowledge, does not look very promising. A private school established on this principle would be conceived of as a very *cheap* school. The labor of the children ought to pay in part for the tuition, and hence the terms must be low. In this connection, it is to be remembered, however, that whatever is accomplished must be done under the eye and by the directions of an instructor, and even then oftentimes in an awkward manner. Doubtless the profits of such service, even at the ordinary rates of tuition, would not be large. The competent educator who hazards an experiment of this kind, must not undertake it for the sake of the pecuniary remuneration alone. The good which may be wrought out in preparing the young for future usefulness, and the advance which will thus be made toward a proper estimate of the dignity of labor in its relation to the training of the intellect, will serve as the highest reward.

GRAMMATICAL NOTES.

XIV.—VERBS IN THE SINGULAR, WITH TWO OR MORE NOMINATIVES.

THE general rule that two or more subjects connected by *and* (expressed or implied) require a plural verb, admits of several exceptions. Some of these are clear and very generally conceded.

The verb should be in the singular, for example—

1. When two or more nouns conjointly name but one object; as, "*Flesh and blood* (= man) *hath* not revealed it unto thee."—*Matt.* xvi. 17. "When the *Ferdinand and Isabella* was published, its author was nearly forty-two years old."—*N. Am. Rev.*, Jan. 1864. "I do not think there is another old *man and woman* (= couple) in Christendom who ought to be so thankful as my husband and I."—*Schen. CoHo Fam.*, p. 442.

2. When two or more nouns successively name but one object under different characters or phases; as, "His questionable *originality* and glowing *metaphor* [*'attentio, a stretching-to'*] was found adoptable, intelligible, and *retains* our name for it [attention] to this day."—*Carlyle*.

"Then kneeling down to heaven's eternal King,

The *saint*, the *father*, and the *husband prays*."—*Burns*.

3. When a singular subject is repeated for emphasis, limitation, or extension of meaning; as, "In the mutual influence of body and soul,

there is a wisdom, a wonderful wisdom, which we cannot fathom."—*Murray's Gram.* "Pure democracy, and pure democracy alone, satisfies the former condition of this great problem."—*Macaulay's Miscel.* "Our own experience as a teacher, and that of not a few of our fellow-teachers, confirms these views."—*Mass. Teach.*, April, 1864.

4. When two or more nominatives are preceded by *each* or *every*, expressed or implied; as, "Every plant and every animal has its country."—*Gold Foil.* "During the day every available horse, cart, wagon, and wheel-barrow was in use."—*Anon.*

5. When, of several connected nominatives preceded by *no*, that nearest to the verb is in the singular; as, "In nature there is no '*Fifth Avenue*,' no *favoritism*, no *exclusiveness*, no costly *peas*, along the cathedral aisles of her grand old woods."—*N. Am. Rev.*, Jan. 1863. "No gardens, no cultivated patches, no attempt at anything ornamental relieves the dreary monotony of the premises."—*Harp. Mag.*, Feb. 1863.

6. When two or more subjects are preceded by *not*, and that next to the verb is in the singular; as,

"Not enjoyment, and not sorrow,

Is our destined end or way."—*Longfellow.*

7. When the verb follows the first of several nominatives, and that nominative is in the singular; as, "The temperament of the two friends was the same, and their habits and tastes very similar."—*N. Am. Rev.*, April, 1863.

8. When two nouns are connected by *and*, the one of which is in the singular and taken affirmatively, and the other taken negatively; as, "This is what *Josselyn*, and no other author, calls the first colony of New Plymouth."—*Hutch. Hist. Mass.* "All work, and no play, makes Jack a dull boy."

9. When a singular nominative is followed by appositional, qualifying, or explanatory terms; as, "All that makes a figure on the great theatre of the world,—the employments of the busy, the enterprises of the ambitious, and the exploits of the warlike,—the virtues which form the happiness, and the crimes which occasion the misery of mankind,—originates in that silent and secret recess of thought which is hidden from every human eye."—*Anon.* "Servitude, or the dependence and consequent subordination of the weak to the strong, of the ignorant to the intelligent, of the poor to the rich, in some form has existed in all ages."—*N. Am. Rev.*, Jan., 1864. "Each class [of rhetorical figures], the metaphor and the metonymy in particular, is capable of being divided into several tribes."—*Campb. Rhet.* "A very considerable portion of his time—always four and sometimes five hours a day—was taken up in this way."—*Boyd. Leis. Hours.* "Their vesture, helms and all, is snowy white."—*Lalla Rookh.*

10. When the subject consists of a phrase, a motto, a proverb, or some

similar combination of words taken as a whole ; as, *God and the right* has been the battle-cry of civilization throughout the world."—Turnbull.

"*Little and often fills the purse.*"—*Treas. of Knowl.*

"*Early to bed and early to rise*

Makes a man healthy, wealthy, and wise."

11. And, in general, when the sentence is so framed that each successive subject is dropped for another, the verb, following the last subject, agrees with it only, and is understood to the others ; as, "The solitary *wagoner*, the lonely *shepherd*, even the feeble *mother* of an idiot boy, *furnishes* lessons in the reverence for humanity."—Bancroft, *Miscel.* "All *order*, all *subordination*, all *unanimity* was lost."—Irving, *Col.* "What black *despair*, what horror *fills* his heart !"—Thomson. "In reading these interrogatories, sometimes their *number*, sometimes their *character*, sometimes the *motive* which seems to prompt them, *impresses* me unpleasantly."—*N. Y. Obs.*, June 15th, 1865. "These *changes* in the meaning of words, this *ebb and flow* of significance, *is* constantly going on."—Swinton, *Ramb. among Wds*, p. 38. "All those minute *circumstances* belonging to private life and domestic character, *all* that gives verisimilitude to a narrative and individuality to the persons introduced, *is* still known and remembered in Scotland."—Scott, *Dedic. to Ivanhoe*. "The rudest *habitation*, the most uncompromising and scanty *portion* of land, in the hands of an Englishman of taste, *becomes* a little paradise."—Irving, *Sk. Bk.* "These constitute the great problem on the solution of which our *prosperity*, and perhaps our *existence* as a nation *depends.*"—Cheever. "Her *literature*, her *progress* in art and science, but above all her rapid *advance* in industrial pursuits, *was* universally acknowledged."—*Harp. Mag.*, Sept., 1862. "Under its influence the *country*, every *part* of the country, *has* prospered beyond all former example."—E. Everett.

Sometimes the last of several subjects expresses a general summing up of what is contained in the preceding. The verb in this case agrees with the last subject only ; as, "War, peace, darts, rivers, *everything* in short, *is* alive in Homer's writings."—Blair. "The hill *country* of Judea, the hills and plains of Samaria, the vale of Shechem, with Ebal and Gerizim upon either hand, the great plain of Galilee, the vale of Nazareth, Tabor and Gilboa, Hermon and Lebanon,—every *spot* in nature that Jesus visited or looked upon, *is* there unchanged."—*N. Am. Rev.*, July, 1863. "The grief of Gamaliel, the indignation of the Pharisees, the fury of the Hellenistic churches, *all this*, he knew, *was* before him."—*Conybeare's Life of Paul*.—Sometimes the expression *all this*, or some equivalent phrase, though suppressed, is implied. In this case, the verb should be in the singular, just as in the preceding example. Thus, "One *country*, one *constitution*, one *destiny* *is* sharply inscribed upon the past annals of our nation."—Prof. H. B. Smith.

But there are cases in which it is not so clear whether the verb in connection with two or more subjects should be in the singular or in the plural. The rules of the grammars, if literally applied, would lead us to pronounce the use of a verb in the singular, in these cases, to be incorrect. And yet examples without number, of this kind, come to us with the sanction and authority of the best writers and speakers of English. We give instances of some of them.

1. When the verb is introduced before the subjects, and the writer evidently connects it in construction with the first of them only, or with each of them singly and successively, we are inclined to think that the singular is not improper; as,

"Thirty days *hath* September,
April, June, and November."

That is, *each* has thirty days.—"Thine, O Lord, *is* the greatness, and the power, and the glory, and the victory, and the majesty."—1 Chron. xxix. 11. This is as though it read, "Thine is the greatness, and the power is thine, and the glory is thine, and the victory is thine, and the majesty is thine;" and is more emphatic and impressive than if the verb were in the plural, however correct the latter might be.—"There *was* the greatest possible concord, and the least possible avarice."—Watson's *Sallust*, p. 14. The very structure of the sentence seems to forbid the use of *were*. And yet we should say, "The greatest possible concord and the least possible avarice *were* manifest."—"Beneath his light and joyous exterior, there *was* a strong will and a vigilant conscience."—*N. Am. Rev.*, Jan., 1864. Here, again, the verb agrees with the nearest subject, and is understood to the other. However correct it may be, it would be exceedingly stiff and unnatural to say, "Beneath his light and joyous exterior there *were* a strong will and a vigilant conscience." And yet all would agree in saying, "A strong will and a vigilant conscience *were* beneath his light and joyous exterior."—"There *was* the high-spirited cavalier, bound on romantic enterprise; the hardy navigator, ambitious of acquiring laurels in unknown seas; the roving adventurer, seeking novelty and excitement; the keen, calculating speculator, eager to profit by the ignorance of savage tribes; the pale missionary from the cloister, anxious to extend the dominion of the church, or devoutly zealous for the propagation of the faith."—*Irving, Col.* The verb here is evidently to be supplied to each successive subject. The singular, therefore, is correct. But place the first two words last, and, as any one may see by making the trial, *was there* will not do: it must be *were there*, for the verb looks back, not to the last subject merely, but to all of them.

2. Sometimes the idea of quantity or amount rather than of number is involved in a subject consisting of two or more nominatives. In that case the verb is properly in the singular, just as it should be when the

subject is in the plural and denotes quantity—"Three-fourths of the wood is cut"—as we have shown in a former paper.¹ Examples:—"Is there not *decision*, and *principle*, and *patriotism* in our public men sufficient to meet such cases?"—*N. Y. Obs.*, Jan. 14th, 1864. The three nouns, *decision*, *principle*, and *patriotism*, as used here, do not convey an idea of plurality at all. Let any one try the verb in the plural—"Are there not *decision*, and *principle*, and *patriotism* in our public men sufficient to meet such cases?" This is the same precisely as if we were to say, "Are there not sufficient *decision*, and *principle*, and *patriotism*, etc.?" which, to us, seems scarcely any better than "Are there not a sufficiency of *decision*, and *principle*, etc.?" The use of the word *sufficient* indicates an idea of quantity, and justifies the use of *is*.—"The whole *style* and *manner* of Dr. Guthrie *is* such as to attract all and offend none."—*Independent*, March 21st, 1861. Had the writer said, "The style and manner of Dr. Guthrie," or "Dr. Guthrie's style and manner," he would have spoken distinctively of two things, and should have used *are* instead of *is*. But, by saying "The whole style and manner," he gives an idea of entireness and unity to the subject, which demands a verb in the singular.—"There *is* much *confusion* and *inconsistency* in the notions of some people."—*Watts*. Here we have an idea of quantity—"much confusion and inconsistency"—which calls for a verb in the singular. So also in the following: "There *was* much *rain* and great *thunder*."—*Irving, Col.* The impropriety of the plural, in these two cases, appears at once on substituting it for the singular forms *is* and *was*. "There *are* much confusion and inconsistency," etc. "There *were* much rain and great thunder." No good writer or speaker ever deals in such language.—"There *was* great *alarm* and *confusion* among the persons on board."—*N. Am. Rev.*, April, 1864. Here a certain amount of something is spoken of. The idea of an amount is an idea of unity; and an idea of unity calls for a verb in the singular. The following example is another of the same kind: "While it lasted, there *was* great *drinking*, *singing*, and *telling* of tales."—*Irving, Sk. Bk.*

3. Again, two or more nouns which express certain related ideas, or different and perhaps complementary phases of thought, are often so used as to convey an idea of oneness in the general thought rather than the idea of a plurality of phases. In such cases, the verb should also be in the singular. Examples: "The *recovery* and *restoration* of very many half-forgotten and wholly unsupplied Saxon words, and of some of the melodious endings which gave such variety and charm to rhyme, *is* yet possible."—*Marsh, Eng. Lang.*, p. 174. The different acts of finding what had been lost, and of replacing what had been removed, expressed

¹ *Am. Ed. Monthly*, September, 1867.

respectively by *recovery* and *restoration*, are considered as simultaneous, and so intimately connected as to be one and the same. Hence the author speaks of them as one—"is yet possible." And his language is correct. "*The recovery and restoration*" is phraseology that implies two acts, considered jointly. But "*the recovery and the restoration*" is language that speaks of two acts, considered individually and apart,—language that necessarily conveys the idea of plurality. Had these been the author's words, he should and doubtless would have written "*are* [instead of *is*] yet possible." The same is true of the following: "The *use* and *signification* [not, 'and *the* signification'] of the interjections employed in any language *furnishes* a very tolerable key to the character of the people who speak it."—*Do.*, p. 295. "When the *force* and *direction* of personal satire *is* no longer understood."—*Junius, Dedication*. "The acknowledged *end* and *aim* of the higher branches *is* culture and discipline."—*Mass. Teach.*, vol. xvi., p. 85. "The end and aim"—"the end aimed at,"—one thing viewed from two different points.—"In his earlier days, there *was* *perseverance* and *completeness* in all his undertakings."—*Irving, Washington*. "Perseverance and completeness"—"perseverance even to completeness." The two ideas are so closely involved as to seem one, there being, in the case referred to, no perseverance without completeness, and no completeness without perseverance. And yet we should ourselves prefer to say, "In his earlier days, perseverance and completeness *were* manifest in all his undertakings."—"This *metaphor* and *metamorphosis* of words *is* exceedingly curious."—*Swinton, Rambles*, p. 38. The word *this* gives union and unity to the ideas embodied in *metaphor* and *metamorphosis*, and calls for *is*.—"This *kindliness* of temper, and this *disposition* to dwell upon what was bright in others, . . . *was* a most prolific source of happiness to him."—*N. Am. Rev.*, Jan., 1864. The idea of both subjects is one; hence the verb is properly in the singular.—"Here *is* palpable *evidence* and absolute *certainly*."—*Irving, Sk. Bk.* That is, evidence amounting to certainty.—"There *is* a wonderful *splendor*, *variety*, and *luxuriance* in the vegetation of those quick and ardent climates."—*Do., Col.* Splendor, variety, and luxuriance are considered as forming the one thing denoted by *a*, and spoken of as "wonderful."—"When we go in, the *cheering*, *clapping*, and *stamping* at first strikes one with a strange sensation."—*Mrs. Stowe, Sun. Mem.*, i., p. 84. The cheering, clapping, and stamping are simultaneous and properly viewed as one act.

Examples like these, which we need not multiply any farther, are found in all good writers, and should be considered correct: not because they are found there, but because they accord with the grammatical principles of the language.

We should like, before closing, to give some examples in which the

rule, that two or more subjects coupled by *and* require a plural verb, has been improperly set aside; and others in which the rule has been followed when it ought not to have been.

1. "Such *generosity* and *self-denial* *was* never before heard of in the East."—*Abbott's Nap.*, i., p. 199. Generosity and self-denial, though kindred virtues, can hardly be spoken of as one.—"In this unity *consists* [consist] at once our *greatness* and our *happiness*."—*Jos. Holl.*

"When the *scourge*

Inexorable and the torturing *hour*

Calls us to penance."—*Milton, Par. L.*, ii., 90.

The repetition of the article indicates two distinct things—the scourge and the hour—a plurality. If these acted successively, that is, if two successive acts of calling were spoken of, the verb would belong to but one, the nearest, of the nominatives, and therefore be properly in the singular. But, as they act together, *calls* should be *call*.—"The continuous *wind* and *sunshine* of yesterday and to-day *is* drying up the roads very fast."—*N. Y. Herald*, March 1st, 1862. Two things—wind and sunshine—both continuous, and acting unitedly, it is true; but, for all this, the idea of plurality is clearly preserved; so that the verb should be in the plural.—"What *appears* [appear] to have been Jesus' *demeanor* and *position* here?"—*Strong*. "As a whole, the *style* and *selection* of words *was* remarkably correct." Say, "The *style* and *the* selection of words *were*," etc., there being, properly, two distinct things spoken of. The following examples err in a similar manner: "The *safety* and [the] *honor* of the empire *was* [were] principally intrusted to the legions."—*Gibbon*. "The labor and [the] risk of the voyage *was* [were] rewarded with almost incredible profit."—*Do*. In cases like these, in which the ideas expressed by the nominatives cannot properly be considered one, the article before the first nominative should be repeated, and the verb be put in the plural.

2. "The whole *teaching* and *design* of the Bible *are* [is] to confirm this view." "All *distillation* and *sale* of spirituous liquors *are* [is] forbidden."—*N. Y. Herald*, March 6th, 1862. *All* relates to both *distillation* and *sale*, and sums them together in one. Similar to this is the following: "It is in exceptions to the application of this rule, that almost all *vigor* and *character* of style *consist*."—*Alford, Q. Eng.*, p. 124. "Supreme power and authority! That *power* and *authority* *are* God's." The idea of supreme power and authority is an idea of unity. This is evident from the fact that, in referring to such power and authority, we should use the word *it*, or *this*, or *that*, not *they*, or *these*, or *those*;—"Supreme power and authority! *That* is God's." If this is correct, "That power and authority *are* God's" should be, "That power and authority *is* God's." Still it would be correct, and some might prefer, to say, "Su-

preme power and supreme authority! That power and that authority [or These] are God's." So, "It possesses that general form and appearance which *indicate* a disposition to fatten."—*Youatt on Sheep*. The idea expressed by *form and appearance* in this connection is an idea of unity. This is indicated by the word *that*, which denotes but one and which qualifies the whole combination *form and appearance*. The nominative *which*, therefore, which relates to this combination, is in the singular, and should have a verb to correspond—*indicates*.—"This *thundering and howling were* [was] not the cry of an enemy, but the mighty voice of God."—*Martyrs of Spain*, p. 341.

The following line, from Campbell's *Pleasures of Hope*, contains an error of a somewhat different nature.

"When soul to soul, and dust to dust *return*."

The conjunction *and* can hardly be said to connect the two nominatives here; and yet the poet evidently regards it as doing so. What it connects are two propositions; for what is meant, and, but for the measure and rhyme, probably would have been said, is,

"When soul returns to soul, and dust returns to dust;"

Or,

"When soul to soul, and dust to dust *returns*."

This shows that, properly speaking, the verb of the first clause is omitted, and that expressed in the second should be in the singular.

MATTER AND METHOD IN EDUCATION.

PROBABLY no question of equal importance has been less discussed than that concerning the relative value of knowledge and its pursuit. Is the possession of knowledge, or the mental exercise involved in its pursuit the higher end? The problem is curious, and its practical importance among the highest. Not less curious than the question itself is its decision, or rather decisions; since it has, without actual discussion, been decided with the greatest readiness in both ways. The majority, without hesitation, have declared the possession of knowledge the superior end, while every philosopher who has considered the question has as readily decided otherwise. Says Aristotle, "The mind is perfected, not by knowledge, but by activity." "If," says Père Malebranche, "I held truth captive in my hand, I should open my hand and let it fly, in order that I might again pursue and capture it." Says Lessing, "Did the Almighty, holding in his right hand *Truth*, and in his left *Search after Truth*, deign to tender me the one I might prefer—in

all humility, but without hesitation, I should request *Search after Truth*." Says Pascal, "It is ever the contest that pleases us, and not the victory. Thus it is in play; thus it is in hunting; thus it is in the search after truth." "Science," says Sir William Hamilton, "is a chase, and in a chase the pursuit is always of greater value than the game."

Closely connected with this question is another of not less practical importance. Is the matter or the method of study of the higher importance. This though intimately connected with the preceding is not fully dependent upon it, since the value of method is equally noticable in the mechanical arts and handicrafts; and few will deny upon reflection that whatever may be the case with our whole mass of mental acquisition, in nearly every single case the facility for further acquisition is of more value than the fact acquired. This, too, throwing out of the question at present the culture or improvement of the mind, and considering only the *practical* utility. The greatest philosophers are here at one. Descartes, co-ordinately with Bacon, the pioneer in the revival of letters, and with him the great lawgiver of modern science, attributed whatever he had accomplished more than other men, to the superiority of his method. The great boast of Bacon was that his method abolished the aristocracy of genius; and the greatest legacy he conferred upon posterity was the revealing of the fact that moderate intellect properly and methodically directed may, by dint of attention, accomplish great results. He liberated mediocrity from its serfdom, and recalled genius from its brilliant but purposeless flights, to useful labor in arranging and classifying the numberless facts collected by the close and methodical attention of more patient laborers.

Here, as in the preceding question, there has been an equally ready practical denial of the comparative importance of method. Every reflecting teacher will at once admit that the greatest enemy he has to encounter is the want of method in his pupils. They spend weeks, and perhaps months, in learning what he knows he could master in a few hours, or, at most, days. He knows that they are working at the short arm of the lever. The memory is excessively burdened. The mind of the student is converted into a storehouse (oftener a lumber-room) of disordered and heterogeneous acquirements. It is to be observed that students who are least methodical, suffer most from the mental exhaustion consequent upon a course of study. This naturally results from the great disadvantage at which the mental labor of such students is performed. The same thing is learned again and again, as often at least as its accidental form is changed. What the student learns in Arithmetic must, to a great degree, be learned in Algebra. His Latin is but little assisted by his English, and his Greek by his Latin. He may separately master the English, the Latin, the Greek, the German, and the French, and each at

nearly as great an exertion as if the others were unknown. The principles common to all are relearned with each, and even then without being in any way united or referred to community. Still less does subsequent acquisition exert any *reflex* influence upon that already in the mind. In fact, we may paradoxically say of such, In the mind is out of mind. Scholars of this class are always getting rusty. The great source of this difficulty lies in this. The person never becomes properly master of his mental furniture, whether original or acquired. There may be much in his mind, much even of value, but it is not *ready*. He is like a mechanic with a shop well supplied with tools of all kinds, but so disordered that their very number is a hindrance, rather than a help. Facts are received in bulk, and never afterward analyzed. The old and the new, the valuable and the comparatively worthless, are in hopeless confusion. Suppose, on the other hand, a new fact presented to a methodical mind. It is first thoroughly analyzed. What is new is separated from what is already well known. What is valuable is discriminated from the valueless. It is turned over, compared with other like facts, placed in all possible relations, till at once it is found wholly unnecessary to commit it; it is already, if important, linked with so many facts that it is impossible to forget it. Such a scholar seldom is conscious of committing to memory. What he learns fastens to him, and no effort can shake it off. Instead, however, of this process, a lesson is usually committed by dint of constant repetition, totally regardless of the fact that however well it may be recited while each thought, each word, brings in that which is to follow, it is connected with nothing else, and even if not forgotten, there is nothing to spontaneously suggest it to the mind.

Closely allied to this fault is that of habitual *inattention*. This is less often a separate fault than the necessary result of the other. There are but few minds capable of long-continued attention to a single thing. In most, exhaustion is in such a case almost instant. Fix the eyes closely upon a single letter of a printed page, and note how soon the effort becomes acutely painful. Confine the attention to a single isolated thought, and if you are capable of doing so completely and intensely, note how soon the effort becomes intolerable painful. Give the mind free play, and the act becomes pleasurable. If each fact stands isolated, it results that the first must be the case. The effort to attend to it will be like that of fixing the eye upon a single letter, and the pain soon induces distraction of the attention. Connect it in its natural relations, and instead of a point we have a wide field over which we may roam with pleasure, and yet attend closely to the matter in hand.

It is evident that in the beginning of our education, our progress is and must be slow. The facts acquired are comparatively unimportant or at least are such as might afterward be learned in vastly less time. They

are necessary as a foundation to the subsequent superstructure, but their value is evidently mainly as a preparation to future study, and should be estimated mainly with reference to their training in method. Yet no attention is paid to this: the progress of the child is estimated by the facts learned; by its progress in matter, rather than method. The teacher, often against his own judgment, is urged on by a *vis a tergo* compelling him to crowd his pupils over studies in a manner that precludes proper method. No time is allowed for this. Our primary schools especially, which should be mental gymnasia, training-schools, measure their success by acquisition, rather than growth. A text-book could hardly hope for success, if it made the method of study even co-ordinate with its matter. Yet it is evident, upon consideration, that the latter is much more readily and perfectly attained through the former than it possibly can be without it.

Thus far we have regarded the question only from the so-called practical side. When we consider the matter in a higher light, the case becomes incomparably stronger. Man is placed upon the earth as its monarch. The earth, the air, and the ocean contribute to his bodily welfare. These all are his servants, whose highest, noblest office is to minister to his wants. He would be pronounced a madman who physically made himself the servant of nature. His Maker has surrounded him with food for mental growth. The facts of the world, external and internal, are in that state of complexity, yet not confusion, that admits science to unravel part of the intricate plan, while there is ever that beyond to lead us on. But as the body is more than food, so is the mind more than that by which it grows, and however noble the object of thought, the mind is more than knowledge; and if we pronounce him unworthy of the name of man who voluntarily submits himself to the will of an equal, what shall we say of him who enthrones the servant, and bows down to that which should serve him?

INVESTIGATION vs. CRAMMING.

IN Mr. Farrar's volume of Essays¹ on a Liberal Education, is one contributed by Mr. J. M. Wilson, mathematical and natural science master in the celebrated Rugby School, which to our mind is one of the best contributions to the discussion of the vexed question of the relations of Science and Literature in general education that has been published.

¹ Macmillan & Co.: London, 1867.

In the course of his argument, Mr. Wilson makes some suggestions as to the spirit and method of teaching natural science in schools,—a subject on which, he justly remarks, there is much misconception; and his suggestions are so eminently sensible and practical, that we transcribe the following for the sake of commending both the spirit and the method to certain American teachers who flatter themselves that they are teaching science, and teaching it scientifically, while they are really doing neither.

This class of teachers is well represented in a fashionable young ladies' seminary that we have in mind. A pupil of this school—it ranks among the first in the country—one day remarked to us that she could not “endure” Botany. It was “perfectly horrid,” she said. We knew her to be fond of flowers: why then should she hate the study of them? A few questions solved the difficulty. Her first plunge into Botany (?) had been into the Linnæan System of Classification, which she had been set to commit to memory! and all her study of the “horrid” science had resulted merely in the acquisition of a gibberish of *-andrias*, *-æcias*, *-gynias*, and so on, that would have frightened a disciple of Jussieu.

The extensive sale of the text-book of Botany used in that school is proof that the “exquisite perverseness” of its method is not disapproved in more than one school, and by more than one teacher. In fact the greater part of our science teaching is, we fear, equally unscientific.

“There are two different methods of teaching science: one, the method of investigation; the other, the method of authority. The first starts with the concrete and works up to the abstract; starts with facts and ends with laws: begins with the known, and proceeds to the unknown. The second starts with what we call the principles of the science; announces laws and includes the facts under them: declares the unknown and applies it to the known. The first demands faith, the second criticism. Of the two, the latter is the easier, and the former by far the better. But the latter is seen in most text-books, and is the method on which many unscientific people ground their disapproval of science. What this former method is, and why it is the better, will be seen by the following remarks.

In the first place, then, *knowledge must precede science*: for science is nothing else but systematized experience and knowledge. In its extreme applications this principle is obvious enough: it would be absurd to teach boys classification from minerals, or the power of experimental science by an investigation into the organic bases. A certain broad array of facts must pre-exist before scientific methods can be applied. This order cannot be reversed. And this is illustrated by the profound analogy that exists between the growth of scientific knowledge in an individual and in the world. Generation after generation of men passed

away, and the world patiently accumulated experience and observation of facts; and then there sprang up in the world the uncontrollable desire to ascertain the sequences in nature, and to penetrate to the deep-lying principles of natural philosophy. And the same desire is based in the individual on the same kind of experience. Where there is wide knowledge of facts, science of some kind is sure to spring up. After centuries of experience the *Philosophiæ Naturalis principia* were published.

And, secondly, this knowledge must be homogeneous with pre-existing knowledge. It is of no use to supply purely foreign facts; they must be such as the learner already knows something of, or be so similar in kind that his knowledge of them is equally secure: such that he can piece them in with his own fragmentary but widening experience. It is to his existing knowledge, and to that alone, that you must dig down to get a sure foundation. And the facts of your science must reach continuously down, and rest securely thereon. Otherwise you will be building a castle in the air. Hence the master's business is to take up the knowledge that already exists; to systematize and arrange it; to give it extension here, and accuracy there; to connect scraps of knowledge that seemed isolated; to point out where progress is stopped by ignorance of facts; and to show how to remedy the ignorance. Rapidly knowledge crystallizes round a solid nucleus; and anything the master gives that is suited to the existing knowledge is absorbed and assimilated into the growing mass: and if he is unwise and impatient enough (as I have been scores of times) to say something which is to him perhaps a truth most vivid and suggestive, but for which his boys are unripe, he will see them, if they are really well trained, reject it as the cock despised the diamond among the barley (and the cock was quite right), or still worse, less wise than the cock, swallow it whole as a dead and choking formula.

On these grounds then, in addition to other obvious ones, Botany and Experimental Physics claim to be the standard subjects for the scientific teaching at schools. In both there pre-exists some solid and familiar knowledge. Both can so be taught as to make the learner advance from the known to the unknown—from his observations and experiments to his generalizations and laws, and ascend by continuous steps from induction to induction, and never once feel that he is carried away by a stream of words, and is reasoning about words rather than things. The logical processes they involve are admirable and complete illustrations of universal logic, and yet are not too difficult. These considerations mark the inferiority, in this respect, of Geology and Physiology, in which the doctrines must far outrun the facts at a boy's command, and which require so much knowledge before the doctrines can be seen to be well founded. And these considerations exclude Chemistry, as an elemen-

tary subject at least, since there is so little pre-existing knowledge in the learner's mind on which the foundations can be laid. On all grounds the teaching of Chemistry should follow that of Experimental Physics.

Unless this method of investigation is followed, the teaching of science may degenerate, with an amazing rapidity, into cramming. To be crammed is to have words and formulæ given before the ideas and laws are realized. Geology and Chemistry are frightfully crammable. But Botany and Experimental Physics are by no means so easy to cram. What they might become with bad text-books and a bad teacher I cannot, indeed, say; but it is a very important consideration. For it is possible to teach even Botany and Experimental Physics with exquisite perverseness, so as to deprive them of all their singular advantages as subjects for elementary training in science. It is possible to compel the learning the names of the parts of a flower before the condition of existence of a name, viz. that it is seen to be wanted, is fulfilled; to cumber the learner with a terminology that is unspeakably repulsive when given too soon—given before the induction which justifies the name has been gone through; to give the principles of classification before a sufficient acquaintance with species has called out the ideas of resemblance and difference, and has shown the necessity of classification; to give theories of typical form when it seems a wild and grotesque romance; to teach, in fact, by the method of authority. And this may be done by truly scientific men, fully believing that this is the true and only method. Witness Adrien de Jussieu's "*Botanique*."

The true method is assuredly to begin by widening for your boys the basis of facts, and instantly to note uniformities of a low order, and let them hazard a few generalizations. The boys will far outrun their master. Their tendency to make generalizations of the most astounding kind is both amusing and instructive; it constantly reminds me of the ancient Greek Philosophy; it is the proof that there is both the power to be trained, and a need of the training. A theory is necessary to observation. Make them verify, and expurgate, and prune, and, if need be, reject their theories by a constant appeal to facts; sympathize with them in their search for truth, and so search for more facts and more accurate observations; and thus the crystal pyramid of their science grows, its base ever widening, its summit ever rising.

The art of the schoolmaster is a maieutic art now as it was in the days of Socrates; it is still his business to make his boys bring their notions to the light of day, to the test of facts; constantly to require verification; but as often as possible to give them the pleasure of discovery. He may guide them to the treasure, but let him unselfishly give them the delight of at least thinking they have found it. This is the charm that tempts them on, and is the highest reward they can win. At first the seeming

progress is slow, but it soon accelerates, and the avidity for learning soon compensates for the apparent poverty of the results at first.

I insist upon this point because I am convinced that it is very important, and very likely to be overlooked: and as Botany seems the best subject for beginning to train boys in scientific methods, and as no English work is thoroughly to be recommended as a guide to botanical teaching, I shall devote a brief paragraph or two to the illustration from Botany of what I hold to be the true method of *beginning* to teach science.

Suppose then your class of thirty or forty boys before you, of ages from thirteen to sixteen, as they sit at their first botanical lesson; some curious to know what is going to happen, some resigned to any thing; some convinced that it is all a folly. You hand round to each boy several specimens, say of the Herb Robert; and taking one of the flowers, you ask one of them to describe the parts of it. "Some pink leaves" is the reply. "How many?" "Five." "Any other parts?" "Some little things inside." "Anything outside?" "Some green leaves." "How many?" "Five." "Very good. Now pull off the five green leaves outside, and lay them side by side; next pull off the five pink leaves, and lay them side by side; and now examine the little things inside. What do you find?" "A lot of little stalks or things." "Pull them off and count them:" they find ten. Then show them the little dust-bags at the top, and finally the curiously constructed central column, and the carefully concealed seeds. By this time all are on the alert. Then we resume: the parts in that flower are, outer green envelope, inner colored envelope, the little stalks with dust-bags, and the central column with the seeds. Then you give them all wall-flowers: and they are to write down what they find: and you go round and see what they write down. Probably some one has found six "*storks*," inside his wall-flower, and you make him write on the blackboard for the benefit of the class the curious discovery, charging them all to note any such accidental varieties in future; and you make them very minutely notice all the structure of the central column. Then you give them all the common pelargonium and treat it similarly; and by the end of the hour they have learnt one great lesson, the existence of the four floral whorls, though they have yet not heard the name.

Next lesson-time they come in looking more in earnest, and you give them single stocks and white alyssum, which they discover to be wonderfully like the wall-flower; and you have a lot of flowers of vegetable marrow, some of which are being passed round while you draw two of them on the board. The difference is soon discovered; and you let them guess about the uses of the parts of the flower. The green outer leaves protect it in the bud; the central organ is for the seeds; but what is the use of the others? Then you relate stories of how it was found out

what the use of the dust-bags is : how patient Germans lay in the sun all day to wait for the insects coming : and how the existence of a second rare specimen of some foreign tree was found out in Paris, by its long-widowed spouse in the Jardin des Plantes at last producing perfect seeds. A little talk about bees, and moths, and midges, and such creatures, finding out what they have seen, and your second lecture is over.

In the third lecture you take the garden geranium, and beg them to examine it very closely to see if it is symmetrical. Several will discover the unsymmetrical outer green leaves ; one or two will discover the hollow back of the stem : then the pelargonium, and its more visible unsymmetry : then the common *tropæolum* : in each of which they find also the same parts, and count and describe them : and lastly, the *tropæolum Canariense*, with its grotesque irregularity : and they are startled to find that the curious-looking flower they know so well is constructed on the same type, and is called by the same name ; and by the end of the lesson they have learned something of irregular flowers, as referred to regular types—something of continuity in nature.

So in succession, for I cannot give more detail, you lead them through flowers where the parts cohere, as in the campanula, through plants deficient or odd, through roses, and mignonette, and honeysuckle, and all the simple flowers you can find ; till they thoroughly know the scheme on which a simple flower is made. Then you challenge them to a dandelion or daisy : and each has to write down his ideas. Your one or two geniuses will hit it : some will be all wrong, without a shadow of doubt ; the majority fairly puzzled. You give them no hint of the solution, tell them to lay it aside ; and you give them the little thrift, and challenge them to find its seeds, and how they are attached. This many will do, and pick out the little seed with its long thread of attachment, and then they will go back to their dandelions with the key to the structure ; and find its seeds too, and be charmed to discover the remains of its poor outer green envelope, and even its little dust-bags. How proud they are of the discovery ! they think they have the key of knowledge now. And then you begin a little terminology,—calyx and sepals, corolla and petals, stamens and pollen, pistil and stigma, and so on ; and test their recollection of the forms of all the flowers they have examined. Then you notice the spiral arrangement of leaves on a twig of oak, or thorn, or willow, and the internodes ; and the overlapping of the sepals of the rose and Herb Robert ; the alternance of the parts ; and finally they work out the idea that the floral whorls grow on the stem, and are a sort of depressed spiral of leaves with the internodes suppressed. A few monstrosities and pictures are shown, and the grand generalization is made ; the pistils are re-examined with fresh interest to test the theory ; and all their old knowledge is raked up once more. Then,

too, the value of the theory is criticised ; and a lesson of caution is learnt.

Then a step forward is made toward classification, by cohesion and adhesion of parts ; and the floral schedule is worked ; and so step by step to fruits, and leaves, and stems, and roots, and the wondrous modifications of parts for special uses, as in climbing-plants ; and the orchids, which are a grand puzzle till a series of pictures from Darwin step in to explain the use of the parts and plan of the flower. Then some chemistry of the plant is introduced with some experiments, and the functions of all the organs are discussed. And lastly, strict descriptive terms are given, and the rest of the course is occupied by the history and the systems of classification, with constant reference however to the other conceptions that the class has gained.

Such a method as this has many advantages. It is thoroughly scientific, however irregular it may seem, and a professor of Botany may smile or shed tears over it for anything I care ; and the knowledge is gained on a sound basis of original observation. Whatever flower a boy sees after a few lessons, he looks at with interest, as modifying the view of flowers he has attained to. He is tempted by his discoveries : he is on the verge of the unknown, and perpetually transferring to the known : all that he sees finds a place in his theories, and in turn reacts upon them, for his theories are growing. He is fairly committed to the struggle in the vast field of observation, and he learns that the test of a theory is its power of including facts. He learns that he must use his eyes, and his reason, and that then he is equipped with all that is necessary for discovering truth. He learns that he is capable of judging of other people's views, and of forming an opinion of his own. He learns that nothing in the plant, however minute, is unimportant ; that he must observe truthfully and carefully ; that he owes only temporary allegiance to the doctrines of his master, and not a perpetual faith. No wonder that Botany, so taught, is interesting : no wonder that M. Demogeot, who visited some English schools last year at the request of the French Emperor, expressed himself to me as charmed with the vivacity and intelligence of the botanical class of one of my colleagues.

Very possibly a master might make his boys get up a book on Botany, and learn it in the order in which it stands in the book,—cellules and parenchyme, protoplasm and chlorophyll, stems and medullary rays, petioles and phyllodes, rhizomes and bulbs, hairs and glands, endosmose and exosmose, secretions and excretions, and so on, and so on ; and ultimately come to the flower and fruit ; and possibly a boy of good digestion might survive it and pass a respectable examination in a year's time. But this is not the aim. And even if in this way a greater number of facts could be learned, it would be far inferior to the method of

investigation. A master must never forget that his power of teaching facts and principles is far inferior to a willing pupil's power of learning and mastering them. He must inspire his boys, and rely on them: nor will he be disappointed. Those who have in them anything of the naturalist will collect and become acquainted with a large number of species, and follow out the study with care and accuracy; and the mass, to whom an extensive knowledge of species is a very unimportant matter, but who can appreciate a sound method of investigation and proof, will have gained all that they can gain from botanical teaching. And it must be remembered by those who speak of teaching science, and yet have never tried it, that a method which would succeed with a few naturalists, might utterly fail with the mass.

There is a time in the growth of mind in which there is considerable activity and considerable power of accumulation, but little power of method. And to insist at this stage on rigorous definitions, on sternest formality, is to forget the indications given by nature alike in the growth of the individual and of the world. In a boy's mind is only the dawning twilight of science, which brightens out slowly, if at all, into the perfect day.

A boy leaves the botanical class as a rustic leaves the militia after three months' drill. He has gained something: he is more awake, can listen and learn better, knows what he is about; in fact he has been drilled. Year after year I have had new boys and old in my classes, and always have been able to notice that at first the new boys seemed to be at a positive disadvantage in competing with the old, although the subject I was teaching had no reference to Botany."



WHEN books were few, to get through one was a work of time and labor; what was written with thought was read with thought, and with a desire to extract from it as much of the materials of knowledge as possible. But, when almost every person who can spell, can and will write, what is to be done? It is difficult to know what to read, except by reading everything; and so much of the world's business is now transacted through the press, that it is necessary to know what is printed, if we desire to know what is going on. Opinion weighs with so vast a weight in the balance of events, that ideas of no value in themselves are of importance from the mere circumstance that they *are* ideas, and have a *bona-fide* existence as such anywhere out of Bedlam. The world, in consequence, gorges itself with intellectual food; and, in order to swallow the more, *bolts* it. Nothing is now read slowly, or twice over. Books are run through with no less rapidity, and scarcely leave a more durable impression than a newspaper article. It is from this, among other causes, that so few books are produced of any value.—*Mill*.

OCTOBER, 1868.

REASONS WANTED.

IT may safely be assumed that every person who has the interests of education at heart, desires,

1. That Teaching, as a vocation, be raised to the rank of a Profession : and not that merely, but to its true rank as the highest profession.

2. That the work of the teacher cease to be mere empiric practice, and become an Art, based on well-defined principles, in harmony with the right development and the highest needs of man : so that the young teacher, after serving a proper apprenticeship in a training-school or elsewhere, shall be able from the first to work correctly and understandingly.

3. That the laws of human development, as well as the true order and method of presenting knowledge, be discovered—if not already known—and properly stated ; so that the educator may have a scientific basis to work from, and no longer be dependent upon his own more or less limited experience, or the limited experience of the few teachers whom he may be able to consult in any emergency.

As many years of observation and patient recording of facts may, and probably will be necessary before a true science of Education can be possible ; it is particularly to be desired,

4. That the known facts and principles of education be collected, so far as may be possible, carefully studied, and some theory or theories propounded which will serve in education, as Darwin's theory of Selection does in Natural History, to concentrate the attention of observers upon those problems in Education which most require solution, and at the same time stimulate them to make and record, and direct them in making and recording the observations needed to put Education on a sound scientific basis.

As it is, there being no one grand objective point aimed at by educational investigators, and no means of determining what has already been accomplished, the working force is scattered and misapplied. Successive generations of teachers go over and over the same ground, each, it may be, constantly progressing, but the whole, as a whole, making no absolute advancement. Educational investigations commonly leave no tangible result. The inventor in mechanic arts leaves his machine. The next inventor improves upon it. Each step forward is a permanent advance. And so it is in other departments of material progress. But so it is not in Education. The teacher dies, and his experience, except in rare instances, dies with him. The new teacher begins, not where his predecessor left off, but at the beginning. We have more teachers now than formerly, consequently a wider field is covered, more work is done, and a greater proportion of the people are in some degree educated. The educational army has been greatly increased, and gradually brought up to the "front." But has the advance guard gone forward any?

It is a question whether the best teacher of to-day has any clearer understanding of what is necessary in education, or pursues, on the whole, any better method than the best teacher of five hundred or a thousand or two thousand years ago. It may be that Education is not a matter susceptible of absolute improvement; that the best possible methods were the first to be adopted, and that the only question which now remains is one of means and amount. To be sure this does not accord with the general notion; but the general notion may not be well founded. At any rate, it would trouble one to give satisfactory proof that it is well founded in fact.

The first thing requisite to the successful pursuit of any object, is a definite understanding of what is to be done. A second and not less important thing is that the work be prosecuted with directness and with all the force that can be concentrated upon it. Neither of these conditions has thus far characterized the work of Education. There is no harmony of opinion in regard to what Education is, or what it is for. There is still greater disagreement in regard to the methods by which it should be pursued. And what is worse, little progress seems to be making toward a permanent settlement of the difficulties involved.

Perhaps a comparison of the views of thoughtful educators and others

who have given attention to this matter, may not only disclose the causes which determine this unfortunate condition of things, but also stimulate a spirit of observation and inquiry, and serve to secure that concert of action among progressive teachers which must prevail before reform will be possible. In the hope of calling out such views, we submit the following questions :

1. Why is Teaching not a Profession ?
2. Why is there no well-defined Art of Teaching ?
3. Why is there no stated Science of Education ?
4. Why has improvement in Educational Methods failed to keep pace with the improvement and multiplication of the means and requirements of education—the constantly increasing amount of knowledge to be acquired, and the increasing demands of modern life for a higher cultivation of the people ?

THE UNSTATED SCIENCE.

WITH respect to the science of Education, we are about where the world was with respect to Astronomy before the day of Copernicus. The principles of teaching are stated loosely and in a hypothetical way. They lie scattered in the minds of scattered teachers and stray books, awaiting the touch of the master-wand that shall crystallize them and make them authoritative. Enough is discovered to show us that Education, unlike Astrology and like Astronomy, is or will be a science. Now and then we meet with a pupil who feels that he has been taught by this or that teacher, whose name he singles out with gusto from among the names of other teachers of whom he can utter no appreciation. And the fact that the average man and woman receives and keeps up unawares the progressiveness of the world in knowledge, shows that a work of teaching goes on. But how vague is the mode ! Who has had stated to him satisfactorily how the thing is done ?

The cramming method, so extensively practised in the schools, is discernible enough. But that is not scientific. There is not a single principle involved in it. It produces mental dyspeptics or parrots, not realizers. It does not get at the intellect directly at all. You cannot find in it any basis whatever for a science. It stands opposed to science.

It tends to crush out scientific progress in teaching. While it does produce a measure of glib recitation, it does not awaken, feed, and develop the intellectual life of the pupil. The wide acceptance of it, the extensive practice of it, the apathy which accompanies it with reference to the methods which seek to make the pupil realize what is presented to him, only shows how mediæval we are in our stage of progress toward an authoritative statement of the science of teaching.

Our teachers' associations, which have professedly in view the interests of the work of teaching, are thorough-in no particular save in darkening counsel by words without knowledge. The frivolity which so generally prevails at these associations is varied mostly by grave discussions of the old questions relative to the cramming methods. The disputants that are mostly heeded are not genuises in teaching. We have no expectation that from the teachers' association, in its present condition, will be reached forth the wand that would crystallize the principles of teaching into a stated science; or even that it will afford much help to the world in its efforts at progress toward the statement of the science.

What is needed, we believe, more than anything else, is a convention of teachers, composed only of those who feel the need of a full and authoritative statement of the science of Education. The effect, we believe, would be extraordinary. A single convention would not complete the work, but it would condition statements of principles, and direct scientific observation and study. A succession of such conventions from year to year, or oftener, would give an astonishing impetus to educational progress.

ARTISTIC TEACHING.

SHOULD the science of teaching ever be stated fully and authoritatively, we should yet fail of attaining progress in the practice of the art of teaching so far as we should continue to rely upon the efforts of teachers upon whom nature has not bestowed the capacity to become artists. As certainly as that a man or a woman must be born with the faculty of eloquence or be forever incapable of becoming eloquent by training, so must a man or woman be born with the faculty of teaching,

or be forever incapable of becoming a genuine teacher by means of training. The great need of the world is artistic teaching. As it is, we blunder into the apprehension of knowledge, rather than perceive it in its beauty as portrayed before our eyes by the artist hand. We wander through a wilderness of facts, and are left to the chance spontaneous working of our faculties to perceive and realize the laws that live within the facts and give them relationship. Men of genius are more the pioneers than the teachers of the world. They lead the march to new facts, and the world looks on and is amazed rather than instructed. We need the artistic teacher to show us the principles; to refer the facts to their appropriate principles; to get at our spiritual insight; to feed us with the spirit of phenomena, so that when we see a fact we shall understand its nature and its place. We need the artist who shall put a stop to the process by which we are crammed, and shall sustain the process by which we shall assimilate. We need the artist who shall put a stop to our wondering and our blundering, and shall by means of teaching produce in us the perception of all things and the realization that all things are ours.

An instinct has put into circulation the saying that the teacher's vocation ranks in importance second to none in its direct influence upon men; but the instinct has in view the vocation of the artist teacher. Were all teachers artists the instinct of the world would be satisfied, and would show its satisfaction by making the wages of teachers as are the wages which recognized artists generally receive from the world. The multitude of unartistic teachers who throng the teacher's sphere and occupy the high places therein, furnish the explanation of the fact that teachers' wages are small as compared with the wages pertaining to work in other professional spheres. The world feels a contempt which it is loth to utter for the unartistic teachers whose bustling efforts produce such grotesque results. By reason of this throng of blind guides, teaching has never yet been led on to the condition of an authoritative science and art, of a recognized vocation and profession. The unartistic teachers have had the management in their own hands. The whole system is corrupt by reason of self-seekers. And the world sees this, hardly knowing that it sees. The scattered artists among the host are the health of the system, but the health is not sufficient to throw off the disease, and the physician is needed.

EDUCATIONAL INTELLIGENCE.

THE population of Chicago, October, 1866, was 200,000. Now, it is claimed to be 240,000; the number between 6 and 21 being over 53,000. The number of school buildings reported as owned by the city is 32; six more were rented. In these buildings there were one high school, 28 district schools, and 3 Independent Primaries. In the High School there were employed twelve teachers, of whom four were women; in the District Schools, 284 teachers were employed, of whom only 17 were men; and in the Independent primaries 21, all women. The whole number of pupils enrolled was 27,260. The average number belonging was 16,392; or 31 per cent. of the school population. The average daily attendance was 15,413. The average number of pupils in daily attendance to a teacher was, in High School, 31; in District School, 55; in Primary School, 60—in the Grammar Grades, 57; in all Primary Grades, 60. The cost for each pupil enrolled was, for tuition, \$8.35, for incidentals, \$2.54—total, \$10.89. Taking as a basis of calculation the average number belonging to the schools, the cost for each pupil, including all expenses and six per cent. upon the valuation of school property, was \$21.15. The total expenditure for school purposes was a trifle over \$432,000; of which about \$230,000 were paid to teachers. In all important particulars the report shows an improvement on the preceding year. The assertion made by the *Chicago Tribune* (See MONTHLY, July, 1868) that there were in Chicago upwards of 20,000 children deprived of school privileges, seems to have been somewhat beyond the truth: still, as the city Superintendent has "no hesitation in saying that accommodations for ten thousand children would be filled within one month, if furnished by the first of September," the *Tribune's* strictures could not have been entirely unwarranted. The salaries paid to teachers in Chicago are good. The teachers in the High School receive from \$1,000, the salary of female assistants, to \$2,400, the salary of the principal. The Principals of District Schools receive from \$1,800 to \$2,000, according to the time they have been employed. Female principals of District and Primary Schools receive \$1,000, as also do the head assistants. Assistants in Grammar and Primary departments begin with \$450, which is gradually increased to \$700, the limit. The comparative tables of statistics of Public Schools, of the principal cities of the country, given on page 196-9, are interesting and valuable.

MILWAUKEE.—The census of 1863 gives Milwaukee a population of 68,000. If the rate of increase that prevailed during the three preceding years continued until 1867, the population of the city must have been at that time not far from 80,000. The school census for the year ending Aug. 31, 1867, gives the number of school age (between four and twenty), as 22,135. The number between six and sixteen, the actual "school age," may be estimated at about 15,000. The census reports as attending public schools, 7,013. The school records show an enrollment of 9,424, with an average attendance of 4,908. For these there were sixteen schools, employing ninety-six teachers. The number attending the 42 private schools, swells the entire school-going population to 15,823, with an estimated attendance of 8,530. The Superin-

tendent contrasts the latter number with the legal school population (22,135), and asks where are the 13,884 that are not in school. This is overdoing the matter. A little reflection would show that at least half of the absentees were too young or too old to be counted as school children. Perhaps half the remainder would attend school if they could. The number enrolled in the schools seems to show that the most of them made the attempt but failed, probably for want of room. The capacity of the schools is not given; but the fact that the average attendance to a teacher was over fifty pupils, shows that there could not have been much room left empty. So the fault seems to lie with the city for not providing sufficient school accommodation, rather than with the children for neglecting to avail themselves of what is furnished. The average number enrolled to a teacher was a fraction under 100. The salaries paid to teachers are exceedingly low—the average of all being less than \$460. The Principals of Grammar departments receive \$1,200; of Intermediate and Primary, from \$500 to \$600. The assistants receive from \$330 to \$450, very few of them getting over \$290. The cost of instruction for the year was \$6.45 for each child enrolled; or \$12.39 for each pupil in daily attendance. The whole amount of teachers' salaries was \$44,090; the amount expended for all school purposes, \$60,836.

ST. LOUIS.—The population of St. Louis, as determined by census, Nov., 1866, was 204,000. The number between 5 and 21 was 66,880, and the estimated number between 6 and 16 somewhat over 40,000. The number of schools reported by the Superintendent for the year ending August, 1867, was 36, with seats for 13,510 pupils. Thirty-one of these schools were classed as District Schools, three were for colored children, one was a High School, and one a Normal School. The number of teachers employed was 229, of whom only 21 were men. The number of pupils enrolled was 15,291—less than 40 per cent. of the number between 6 and 16, yet nearly two thousand more than there were seats for. The average number belonging to the schools was 10,754, and the average daily attendance a little over 10,000. Only 859 of the pupils were between 6 and 7 years of age. The school accommodations are so insufficient that the Superintendent wisely gives the preference to children over seven. The average age of the pupils was 11 years. The average number of pupils to a teacher, in all the schools, was 47; the highest average in any school being 60. The yearly salaries of teachers range between \$250 and \$2,750. Seventy-seven teachers get less than \$600 each; 106 receive \$600; 51 receive from \$650 to \$900; 16 receive \$1,000; and 27, from \$1,200 to \$2,750. The average salary was \$725.77, or \$14.85 for each pupil. The incidental expenses increased the cost per scholar to \$16.84 for each pupil.

THE Meetings of the National Associations at Nashville were well attended, and, on the whole, very successful. Mr. Van Bokkelen, late Superintendent of Maryland, was chosen President of the National Teachers' Association for the ensuing year.

MR. EDWARD DANFORTH, for the past six years city Superintendent of Troy, N. Y., will devote the most of his time during the fall to instruction in Teachers' Institutes. Mr. Danforth has had much experience as an educator, and also as a conductor of Institutes.

RUSSIA.—A petition, signed by four hundred ladies, has been presented to the Minister of Public Instruction, praying that the professors in the universities may give lectures to women, so as to satisfy their legitimate desire for higher instruction.

BENGAL.—The London *Spectator* says that it is considered so necessary in Bengal that girls should be married young, that bridegrooms are often tempted with a dower. The price varies according to qualifications, and oddly enough the highest qualification is a university degree. The lad who would have accepted £100, demands, if he has a degree, £250, and always gets it. Fathers in fact compete with one another, and the lucky holder of a diploma is, as it were, put up at auction. Of course, the bidders are a good deal influenced by the idea that a candidate for office, having a diploma, will be favored by the government; but there is something else. Bengalese respect intelligence above everything but pedigree, and they see in the diploma an honest and thorough test of it—an opinion extremely creditable to the university examiners.

CHINA.—*The Nation*, on the authority of the Journal of the German Oriental Society, says that a new University has been founded at Peking, with the sanction and under the patronage of the Chinese Government. The project originated with Prince Kung, whose memorials to the Emperor on the subject are given in full in the above-mentioned journal. A large space in the programme of study being devoted to astronomy, mathematics, the natural sciences, and the mechanical arts, the necessary buildings have been erected, with an observatory constructed after European models, and equipped with the best instruments. The professors are mostly French and German. These gentlemen are already in Peking studying the Chinese language, and otherwise fitting for their peculiar work. The innovation of course meets with the most bitter opposition from the learned caste, which has hitherto enjoyed a monopoly of erudition; and Prince Kung is accused of treason against the venerable traditions of the nation, and of disgracing the Celestial Empire by introducing foreigners as instructors. The institution is expected to go into operation in about two years, and, if well managed, will produce very important results. Prince Kung, in his last memorial and proposals addressed to the Emperor, refers to a general petition which had been presented previously, and which we believe set forth pretty well the principles on which the new institution is founded. If so, there is to be an examination of candidates before admission: the pupils are to live in the university, so that they may be within easy reach of their masters, and out of the reach of temptation; there are to be monthly examinations: every three years there will be a general examination; successful students will be admitted into the public service. One regulation—proposed, but not, so far as we are aware, adopted—is to the effect that “the students shall be properly paid while pursuing their studies; and this pay shall consist not of board and lodging merely, but also of a sum of ready money monthly, in order that the pupils may not indulge in melancholy reflections, which are fatal to mental activity.”

CURRENT PUBLICATIONS.

TEACHERS in search of a book of test-words for the higher classes in spelling will do well to examine Mr. Superintendent Randall's volume, entitled "First Principles of Popular Education and Public Instruction."¹ It contains by far the best collection of difficult words that we have seen; and as they are thrown into the form of sentences, like the dictation exercises in certain modern spellers, those teachers of spelling who follow the writing method, will find it the best book for their purpose in market. The only objection that can be urged against it for this use is the extreme length of the periods; but as one may stop almost anywhere in the sentences without serious detriment to the sense, the skilful teacher will find but little trouble in adapting his dictations to the capacity of his pupils.

The book is a capital one also for teaching the meaning and use of words—it affords so many happy illustrations of their misuse. Let a class carefully translate the author's verbiage into common English—that is, so much of it as is translatable—looking up in the dictionary the true significance of the words employed, and showing why the words standing in each sentence should not have been used in that particular instance, and thenceforth and forever they may snap their fingers at the makers of spelling-books and dictionaries. They will have acquired a knowledge of every hard word in the language by actual investigation. It is needless to say that this sort of critical study of words is of the highest practical utility.

We can recommend the volume further as a supplementary text-book in rhetoric, especially for use in Southern colleges. As a writer, Mr. Randall fairly surpasses *The Fallen Tower*; and the frightful examples of Micawberese which his book affords, are sufficient, we believe, to deter the most reckless Sophomore from agonizing in polysyllables over the shadows of ideas, as he is almost certain to do if born south of Mason and Dixon's line.

There is another use for which this book is admirably adapted, and that is as a drill-book in vocal gymnastics. Any person, who shall acquire the ability to recite fluently the combinations here given, need not hesitate at any succession of sounds in the English language. Indeed, let the aspirant to oratorical honors recite daily, *ore retundo*, from these pages, beginning with the shorter sentences and gradually extend his conquest to the longer ones—delivering each sentence, if possible, at a single expiration—and there is no doubt but he will in time become as fluent and long-winded as the author himself. Caution is needed, however, that he proceed very slowly, and never undertake too much. Human lung-capacity has a limit, and that limit is reached long before the end even of Mr. Randall's ordinary flights—the average length of his periods being about half a page, while his more ambitious efforts far exceed that length. We would favor the reader with a specimen or two if we could spare the space. It will answer as well perhaps to give sta-

¹ First Principles of Popular Education and Public Instruction. By S. S. RANDALL. New York: Harper & Bros., 12mo., cloth, pp. 256.

tistics of a single sentence, taken almost at random. We opened to it by chance, and have not taken the trouble to look for a longer one. This will do. It begins at the third line from the top of page 94, and closes in the tenth line from the bottom of page 95. It contains in all 341 words, of which 214 have one syllable, 56 have two syllables, 44 have three syllables, 16 have four syllables, and 11 have five or more syllables—the number of big words falling considerably short of the average.

There is still another characteristic of this book, which cannot be too highly commended: that is its originality. In this respect it stands out in striking contrast with a book which we had occasion to notice the other day, the work of a gleaner in the same field which Mr. Randall soars over, but who does not scruple to glean a whole sheaf now and then when it suits his purpose. This book is Mr. Randall's own. His ear-marks are shown in every word.

It may not be amiss to state also that Mr. Randall takes the highest ground on all subjects, and not unfrequently gets so high that some may think he has no ground whatever to stand on. Yet his positions and recommendation are uniformly sound and practicable. Witness the first of his "First Principles:"

"And the first step of permanent advancement in the true philosophy and science of Education," he says, page 22, "will then only have been taken when the principle shall have been firmly and irrevocably established, as the foundation of social order and individual and general well-being, that Education, in the highest acceptance of the term, shall be universal and free, and that *neither the wilfully ignorant, nor the persistently vicious man or woman shall, under any circumstances, be permitted to contract the relations of marriage or to give birth to an offspring destined to add to the already sufficiently formidable amount of suffering and misery, physical and moral, with which the world abounds!*"

In view of our implied failure to take the "first" step of permanent advancement in education, and admitting the practicability of the "principle" which Mr. Randall has the honor of discovering, we would respectfully propose the immediate establishment of a new office—that of City Superintendent of Propagation; and further, that Mr. Randall be at once transferred thereto from the position he now occupies. We sincerely believe that such a transfer would be of the highest possible advantage to the Educational interests of the city.

THE first edition of the first volume of Chase and Stuart's Classical Series¹ was so favorably received, that a second edition is already before the public, improved by the addition of a concise and accurate lexicon. The second volume² is also presented in the same neat and attractive form. The prince of Latin poets has fallen into the hands of one who deserves the thanks of teachers as well as students for the faithfulness and general excellence with which he has discharged his duty as editor and commentator. The notes, which are clear and concise, are followed by an explanatory metrical index, remarks on certain points of classical versification, and an index of the proper names occurring in the *Æneid*.

¹ *Cæsar de Bello Gallico*. Eldridge & Bro., Philadelphia.

² *P. Vergili Maroni's Æneis*. Eldridge & Bro., Philadelphia.

The small size and the form of the volumes speak loudly in their praise; at the same time the print is large, clear, and attractive. In short, they are the neatest, most charming and satisfactory text-books we have ever seen.

IN preparing her little instruction-book¹ in the Art of Wood Engraving, Mrs. Fuller has had especially in mind the wants of learners unable to command the personal services of a teacher. She explains briefly the technical terms of the Art, and describes the methods employed in producing the various kinds of wood-cuts, first describing the tools and apparatus necessary to the engraver, and explaining their use. The book may be read with benefit not alone by those desiring to become engravers, but also by those whose interest in the art extends no further than a desire to know how pictures are made. As an employment for women, Mrs. Fuller believes that wood engraving affords many advantages, not the least of which is the fact that engravings are paid for according to the amount and quality of the work required in making them, and not according to the sex of the Engraver.

MAYHEW'S "University Book-keeping"² is well written and well made. It could hardly be otherwise and be Mr. Mayhew's. The forms are good and the practical exercises full and in great variety. The Introductory Essay, showing how civilization gives rise to business, and how business renders book-keeping necessary, makes an excellent preparation for the study of the art. The chapter on Business Correspondence is a full and instructive presentation of the grammar, logic, rhetoric, and etiquette of letter-writing. The remarks on commercial papers, forms, and calculations are excellent, as are also those on the philosophy and morals of business. Much prominence is given to Commercial Law. Marine and Fire Insurance are treated, and the principles of life insurance discussed and applied. The author's experience as a Collector of Internal Revenue, has enabled him to introduce an example for practice, which affords an admirable illustration of the adaptation of Double Entry to complex business. Considerable space is also given to Banking—especially to Savings Banks, and their beneficial influence, as one of the most useful of modern institutions. The work is well printed and well bound.

BOOKS RECEIVED.

A. S. Barnes & Co.: STEELE'S FOURTEEN WEEKS IN ASTRONOMY.—WORMAN'S COMPLETE GERMAN GRAMMAR.—CHAMPLIN'S POLITICAL ECONOMY.—THE INDEPENDENT FOURTH READER.—SEARING'S VIRGIL'S ÆNEID.—THE DISCIPLINE OF LIFE. MRS. LINCOLN PHELPS.—THE STUDENT. DO.—THE EDUCATOR. DO.—A SCIENTIFIC BASIS OF EDUCATION. JOHN HECKER.—MONTEITH'S SCHOOL MAPS. The Hemispheres (2) Europe, Asia, and Africa. Harper & Brothers: HISTORY OF THE AMERICAN CIVIL WAR. JOHN WM. DRAPER, M. D., LL. D. In three volumes. Vol. II., pp. 614.—MISCELLANEOUS PROSE WORKS. EDWARD BULWER (LORD LYTON). In two volumes. Vols. I. and II., pp. 423-363.—THE OPIUM HABIT, with Suggestions as to the Remedy. pp. 335.—COMER'S NAVIGATION SIMPLIFIED. A Manual of Navigation as practised at Sea. pp. 163.

¹ A Manual of Instruction in the Art of Wood Engraving. By S. E. FULLER. Boston: Joseph Watson. Paper, 50 cts.

² University Book-keeping. By IRA MAYHEW. Boston: Saml. F. Nichols. 8vo., cloth, pp. 318.